VOL. IV. NO. 166.

GARDEN AND FOREST

A JOURNAL OF HORTICULTURE LANDSCAPE ART AND FORESTRY

APRIL 29 1891

PRICE TEN CENTS.] Copyright, 1891, by THE GARDEN AND FOREST PUBLISHING COMPANY. [$4.00 A YEAR, IN ADVANCE.

HARDY PLANTS.

Rhododendrons, Japanese Maples, Hardy Azaleas, Rare Trees and Shrubs. The finest and most complete stock in America. The finest Catalogue in the world is sent for 25 cts., which is allowed on first order.

B.A. ELLIOTT COMPANY, Pittsburgh, Pa.

Ornamental Trees

SHRUBS AND CONIFERS.

Finest collection in New England. Includes the best novelties. 90-page catalogue full of good hints.

LARGE AND SMALL FRUITS.

Proved for New England climate. 28-page catalogue with culture.

HARDY BORDER PLANTS.

Finest collection in America. 60-page catalogue. Over 800 varieties described. The most complete on the subject in America. The above are "Three Valuable Handbooks." All plants can be seen at the Nursery, which was established in 1854.

JACOB W. MANNING,

THE READING NURSERY, Reading, Mass.

All Catalogues Free.

TREES

AND SHRUBS.

Many choice Novelties and all the Standard Varieties. A large and reliable stock of superior quality. Send for Catalogue.

WM. C. STRONG,

WABAN, MASS.

CHRYSANTHEMUMS

500 Varieties of the Choicest Kinds to be found in the world. All the finest Novelties. Catalogue free.

Dr. J. S. HINNERSHOTS, Reading, Pa.

ENGLISH, FRENCH AND GERMAN

RIDING SADDLES

Bridles, Stirrups, Bits, Spurs, Whips,

And Equestrian Goods generally.

Makers of the Celebrated **Whitman Saddles** (Ladies' and Gentlemen's). Illustrated Catalogue free.

WHITMAN SADDLE CO., 118 Chambers St.

NEW YORK CITY.

Our

Cook Book

of seventy pages, full of choice receipts, covering the whole subject from Soup to Dessert, will be

Mailed Free

to any lady sending stamp and address to

CLEVELAND BAKING POWDER CO.,
81 & 83 FULTON ST.,
NEW YORK.

Please mention this paper.

PAINT YOUR ROOFS WITH

DIXON'S SILICA GRAPHITE PAINT

Water will run from it pure and clean. It covers double the surface of any other paint, and will *last four or five times longer*. Equally useful for any iron work. Send for circulars. JOS. DIXON CRUCIBLE CO., Jersey City, N.J.

F. DEVOE & CO.

(ESTABLISHED 1852.)

Offices: Fulton St., cor. William, New York.

Ready-Mixed Paints

FOR

COUNTRY HOUSES,

CONSERVATORIES,
GREENHOUSES,
BARNS, STABLES,
FENCES, GATES, Etc.

If you think of doing any painting this Spring, we wish to call your attention to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil, and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fire-proof." We use no secret or patent method in manufacturing them, by which benzine and water are made to serve the purpose of pure linseed oil.

Samples of Fifty Desirable Shades for consumers on request.

FINE VARNISHES.

ARTISTS' MATERIALS.

PAINTERS' SUPPLIES OF ALL KINDS.

NOW IS THE TIME TO PLANT

Hardy Water-Lilies.

	Each.
Nelumbium Speciosum, (The true Lotus.)	$1.50
Nelumbium Luciferum,	1.50
Nymphæa Odorata Rosea, (The Pink Pond-Lily.)	1.50
Nymphæa Marliacea Chromatella, (The new Yellow Water-Lily.)	2.00
Nymphæa Alba Candidissima, (The Purest White.)	2.00
Nymphæa Mexicana,	.50

STRONG PLANTS WILL BLOOM THIS SEASON.

W. TRICKER, Dongan Hills, N.Y.

RHODODENDRONS, HARDY AZALEAS, RARE TREES,

New Flowering Shrubs, Double Lilacs, Hardy Perennials.

WE GROW ALL THESE IN QUANTITY, and at LOW PRICES. IF YOU CONTEMPLATE PLANTING, write for our CATALOGUES. They are a helpful guide to tasteful and economic planting; and you can realize **Pleasure and Profit** by consulting them. We give, freely, special suggestions and plans to our customers, on request, for laying out and planting private grounds.

SHADY HILL NURSERIES, Cambridge, Mass.

Yale Strawberry.

A late variety, of large size, perfect blossom. Splendid shipper and of excellent quality. Send for circular. Address **STEPHEN HOYT'S SONS,**

New Canaan, Conn.

THE THERMOSTATIC INCUBATOR. The most reliable machine made. Fully guaranteed. Used by leading Poultry raisers. *If you wish to know all about this really first-class Incubator send for circular, free.* Send for Warner's catalogue of Brooders and Hot Water Heaters. **JAS. E. WARNER, 19 Park Place, New York City.**

PANSIES ONLY.

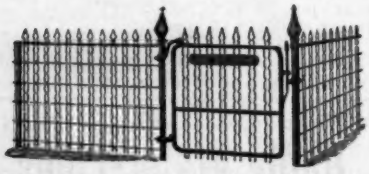
The grandest Collection ever offered, including all the Latest Novelties. Our Seed is Warranted to be Fresh, Pure and Strictly First-class. Send for new Price-list.

ALBERT BENZ, Douglaston, N. Y.

THE
North American Review FOR **MAY**
Contains:
THE GOSPEL FOR WEALTH
By BISHOP HENRY C. POTTER.
Irresponsible Wealth.
By the HON. EDWARD J. PHELPS.
Favorable Aspects of State Socialism.
By the RT. HON. JOSEPH CHAMBERLAIN.
The Wiman Conspiracy Unmasked.
By SIR CHARLES TUPPER.
Canada and the United States.
By THE MARQUIS OF LORNE.
Napoleon's Views of Religion.
By H. A. TAINE.
Common-Sense on the Excise Question.
By WILLIAM S. ANDREWS and the late HOWARD CROSBY, D.D.
The Modern Extinction of Genius.
By JULIEN GORDON.
Our Business Prospects.
By HENRY CLEWS.
Lynch Law and Unrestricted Immigration.
By THE HON. HENRY CABOT LODGE.
The Politician and the Pharisee.
By THE HON. J. S. CLARKSON.
And other Important Articles.
SOLD BY ALL NEWSDEALERS.

JOSEPH GILLOTT'S STEEL PENS.
GOLD MEDAL, PARIS EXPOSITION, 1889.
THE MOST PERFECT OF PENS.

No Cows eating
plants in your front yard if you will protect and BEAUTIFY WITHOUT CONCEALING your Lawn by erecting a
"Hartman" Steel Picket Fence.



We sell more Lawn Fencing than all other manufacturers combined, because it is the **Handsomest** and **Best Fence** made, and **cheaper than wood.**
Our "Steel Picket" Gates, Tree and Flower Guards and Flexible Steel Wire Door Mats are unequaled. A 40-page illustrated catalogue of "**Hartman Specialties**" mailed free. Mention this paper.
HARTMAN M'F'G CO.,
WORKS: BEAVER FALLS, PA.
BRANCHES: 102 Chambers Street, New York; 508 State Street, Chicago; 73 S. Forsythe Street, Atlanta; 1416 West Eleventh St., Kansas City.

The Gill Engraving Co.,
39 & 41 Park Place, New York.
PHOTO-ENGRAVING by all Modern Processes.
Cuts from Photographs, Pen and Ink and Crayon Drawings, Wood Cuts, Etc., by Zinc Etching, Photo-Electrotyping and Half-Tone.

HARDY, RARE SHRUBS FOR EASTERN GARDENS.
Japan Maples in 20 choice sorts.
Jap. Magnolias, Stellata, Parviflora, etc.
Novelties in Trees and Herbaceous Plants.
Jap. Pæonies, in magnificent coloring.
Jap. & Calif Seeds and Bulbs in grand variety.
Miniature Jap. Orange Trees in fruit.
Rare Conifers, Bamboo, etc.
Safe arrival by Freight, Express or Rail guaranteed. Send for Catalogue.
H. H. BERGER & CO., San Francisco, Cal.
P. O. Box 1501.

HARDY PLANTS.
Descriptive Catalogue of 100 pages will be mailed to all applicants. Hollyhocks, Iris, Pæonies, etc., together with many NEW SORTS not before offered.
H. MEYERS,
Lock Drawer E,—Late Woolson & Co.—Passaic, N. J.

MUSHROOM SPAWN. Best Milltrack. Of unsurp'd quality.
—FRESHLY IMPORTED.—

Can be thoroughly relied on to produce a fine crop of the best Mushrooms. Our stocks are the largest and freshest in the country. Quality guaranteed the BEST IN THE WORLD. Why spend your money on doubtful quality, when you can get the best at a price that will please you? We sell at rock-bottom prices for first quality spawn. By mail, post-paid, 22 cts. per pound, Five pounds for $1.00. By express, Ten pounds for $1.20, Fifty pounds for $5. One pound of spawn will plant a space 3 feet by 4. Special prices for LARGER quantities.
John Gardiner & Co., 21 N. Thirteenth St., Philadelphia, Penna.

THE United States Mutual **ACCIDENT** Association
by its justice and liberality has won such a degree of popularity that it is to-day the largest organization furnishing Accident Insurance.
$100,000 Emergency Fund.
$5,000 Full Indemnity Preferred
Policy costs $15.00 per year.
320, 322 & 324 Broadway.
CHARLES B. PEET, President.
JAMES R. PITCHER, Sec'y and Gen'l Manager.

GOLD MEDAL, PARIS, 1878.
W. BAKER & CO.'S Breakfast Cocoa

from which the excess of oil has been removed,
Is absolutely pure and it is soluble.
No Chemicals are used in its preparation. It has *more than three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, EASILY DIGESTED, and admirably adapted for invalids as well as for persons in health.
Sold by Grocers everywhere.
W. BAKER & CO., Dorchester, Mass.

BEECHAM'S PILLS
ACT LIKE MAGIC
ON A WEAK STOMACH.
25 Cents a Box.
OF ALL DRUGGISTS.

UNITED STATES NURSERIES.
CHRYSANTHEMUMS.
Fine healthy stock of all the finest varieties now ready for delivery. Send your orders in early, or write for Catalogue.
Respectfully,
PITCHER & MANDA.

SHRUBBY SPIRÆAS
Ariæfolia, Thunbergi, Van Houttei, etc.
ROSES,
HYDRANGEAS, BERBERIS, ETC.,
Hardy Herbaceous Plants,
AQUILEGIA GLANDULOSA, GYPSOPHILA PANICULATA,
Spiræa Japonica grandiflora, New.
Send for Catalogue.
REA BROTHERS, Norwood, Mass.

Garden and Forest.

Among the contents of next week's issue (No. 167) will be the following articles:

The Douglas Fir. (With illustration.)
EDITORIAL.

A California Cemetery.
By CHARLES HOWARD SHINN.

Eucephalartos Frederici Guilielmi. (With figure.)
By W. WATSON.

Earliness in Vegetables.
By T. H. HOSKINS, M.D.

The paper will contain an illustration of a Douglas Fir, from a photograph, and one of Eucephalartos Frederici Guilielmi, also from a photograph.

GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

Office: Tribune Building, New York.

Conducted by . . . . . Professor C. S. Sargent.

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, APRIL 29, 1891.

TABLE OF CONTENTS.

PAGE.

Editorial Articles:—A National Reservation at the Head-waters of the Mississippi . . . 193
Tree-planting in Cities . . . 193
The Gardens at Monte Carlo. (With figure.) . . . 194
How We Renewed an Old Place.—IV. *Mrs. J. H. Robbins.* 194
Winter Studies of the Pine Barren Flora of Lake Michigan.—II. *E. J. Hill.* 195
New or Little Known Plants:—Aster Tartaricus. (With figure.) . . . 196
Foreign Correspondence:—London Letter. *W. Watson.* 197
Cultural Department:—The Reticulated or Sponge-bearing Cucumber, *Dr. R. P. Harris.* 198
Some Early Native Flowers. *F. H. Horsford.* 199
The Snowflakes. *M. Barker.* 200
Palms. *W. H. Taplin.* 201
Orchid Notes. *M. Barker.* 201
Transplanting Hardy Ferns. *H.* 201
Decay Spots upon Leaves. *B. D. H.* 201
Correspondence:—Notes from Passaic. *G.* 202
Botanical Nomenclature. *Professor N. L. Britton.* 202
Insect Lime, Nevertheless. *B. E Fernow.* 202
The Sugar Maple in Flower. *R. S.* 203
Periodical Literature . . . 203
Notes . . . 204
Illustrations:—Aster Tartaricus, Fig. 35 . . . 197
The Gardens at Monte Carlo, Fig. 36 . . . 200

A National Reservation at the Head-waters of the Mississippi.

In the eighteenth annual report of Professor N. H. Winchell, State Geologist of Minnesota, it is suggested that a state park should be established, and the location especially favored is the region about the Itascan source of the Mississippi River. Here are the prime attractions of many lakes, rivers and streams of pure water which are found where the tumuli of the glacial epoch formed depressions and reservoirs such as mark its moraines. Besides this, it has much historic interest as a region of adventure since the days of Lieutenant Allen, of Schoolcraft and of Jean Nicollet.

This recommendation of a great forest-reserve, which might include the head-waters of the Mississippi, the St. Lawrence and the Red River of the North, has more than a mere local importance. In the first place, a dense forest on the north-western highlands of Minnesota, or, as it is known, the Height-of-Land region, which constitutes the divide between the Red River and the Mississippi, would be of great value in preserving the water-supply of these great rivers. The land here consists of rolling, gravelly drift-hills, with many small lakes which have neither inlet nor outlet, while at a lower level there are springs and lakes, with under-ground supply, which constitute the remotest sources of the three great drainage-systems of the continent. No doubt, if all these lakes and streams and reservoirs could be protected from sun and wind by dense coniferous forests, which would also protect the ground from deep freezing and the snow from melting rapidly, this would help to make a more uniform distribution of water. It is well known that, in the woods, ground which was frozen in the fall will thaw out under deep snow, and the snow will gradually settle, thawing underneath, though the temperature above it may be below freezing. While these conditions prevail in the deep woods, on the prairie, but a few miles away, where the winds have full sweep, and the ground is blown bare, the frost is often from five to fifteen feet deep, and may remain in the ground until June or July. Meanwhile, the melted snows with the spring rains have run off from the surface, instead of settling into the soil. The great floods in the Red River valley, which is practically treeless except near the heads of its eastern tributaries, follow cold winters with deep snow, and occur in April and May as the snow melts.

For the purpose, therefore, of protecting our water-supply there are few regions in the United States where a forest-reservation could serve a better purpose. It should be remembered, too, that fires started by Indians and settlers run over this drift-region, through the forests of Norway Pine, Jack Pine and Poplar in front of the lumbermen. It is probable that, west of the Mississippi, as much log-timber has been destroyed by fire during the past thirty years as has been cut. If a reservation could be held here, while some of this timber remains, an experiment in systematic forestry might be made, with a reasonable chance of proving that it could be conducted with profit. If this is delayed for a few years, instead of having timber and young growth to start with, nothing will be left but worthless barrens throughout all this elevated region, and, indeed, these barrens cover a considerable portion of it already.

This proposed reservation, which should include Itasca Lake and the tributaries above its outlet, is a basin of unusual beauty, abounding in mineral springs as well as in typical moraines, drift-hills and lakelets. It is from 1,200 to 2,000 feet above the sea-level, and is, substantially, a non-agricultural region, although not too cold for farming. The hills are covered with the growth of the trees named above, where they have not been destroyed by fire, and there are forests of Tamarack, Spruce and Fir in the low-land. It is mostly unsettled yet, but it may be impossible in Minnesota to secure an unbroken reserve that would cover all the land which should be held in timber, for, scattered among the forests, there is land here and there which could be profitably tilled. But there is little doubt that it would be wise to withhold all the timber-land and brush-land of the state from settlement until it should be examined and the question of its adaptability settled. The present practice is to enter the land, strip it of its timber, and then, if it is not good agricultural land, to abandon it to annual fires. In this way millions of acres are made non-productive. There are at least 9,000,000 acres in northern Minnesota, at a rough estimate, which could be always more profitably kept in wood-land than in farm-land, while the entire 30,000 or more square miles which are in timber and brush should be protected from fire and held for producing timber until it was actually entered for farm-cultivation.

The senate of Minnesota has already passed a series of resolutions, which were prepared at the suggestion of the Minnesota State Forestry Association, petitioning President Harrison to set apart a vast tract of unoccupied and non-arable lands which lie contiguous to the Lake of the Woods, to Rainy Lake and to Rainy River, for a great national park. There are 3,000,000 acres in a compact body in that section, and the Forestry Association urges that at least one-third of this be reserved. Recent law, as we have explained, empowers the President to set apart such reservations. No doubt, the friends of forestry in various parts of the country will be prompt to point out places where it may be wise to exercise this power. It seems to us that this high region of Minnesota is one which is certainly worthy of attention for this purpose.

The Boston papers announce that the Forester of that city is prepared to give shade trees to citizens who will agree to set them on the streets before their property, the recipients to supply at their own expense the labor and soil necessary to plant the trees. Theoretically, this sounds attractive; practically, if the offer is accepted by many people, the appearance of the city will be seriously injured, and the taste of the inhabitants for trees and tree-

planting will be checked rather than developed. It is a difficult matter to make trees thrive in cities; they must be carefully selected for the purpose, and special attention must be given to planting them if they are to struggle successfully against the hardships of a city life. Uniformity is essential in a street plantation, and uniformity can only be obtained by planting in one street trees of one kind, and by planting them all in the same way—that is, with the same amount of soil about their roots and equal chances for obtaining moisture. If each of a dozen men, living in the same street, should exercise his individual taste in selecting the tree to be planted before his door—one planting an Ash, another an Elm, another a Maple, the next a Spruce, a Pine, a Catalpa or a Sycamore—and if the trees are furnished with soil according to the intelligence or liberality of the individual planter, it will not require any very great expenditure of imaginative force to picture to the mind what this row of trees will look like at the end of ten years. A line of lamp-posts, each selected according to the fancy of the citizen in front of whose house it was placed, would be less grotesque and objectionable.

The decoration of city streets with trees is a proper and excellent thing; its importance is recognized in most of the great cities of the world, and in some of them it has been carried out in an admirable manner. It is a part of street construction, however, just as much as paving or the setting of curb-stones, and unless it can be done well under an intelligently studied system by the municipal authorities themselves, it had much better not be done at all. If the citizens of Boston feel any doubts with regard to the advantage of good street-planting over bad street-planting, they have only to compare their delightful Beacon Street mall with the older plantations at the eastern end of Commonwealth Avenue.

The Gardens at Monte Carlo.

MANY are the sins that have been committed in the laying out and building of American towns, but the greatest of all, perhaps, has been the neglect or defacement of their water-fronts. Whether the adjacent water is ocean or great river, lake or little stream, we seldom see its shores turned to the best advantage, and often they present a more deplorable aspect than any other part of the town. In New York tumble-down, malodorous, muddy wharfs, flanked by streets which are frequently pools of water, line a shore that ought to be encircled by well-built, well-kept piers, and even the precious little expanse of Battery Park is daily threatened with curtailment; in Boston the back yards of Beacon Street houses lie along the wide estuary where a stately, tree-bordered esplanade should have stretched; and the river or brook which intersects a country town is most often edged by rickety sheds or fringed with ragged weeds, and is spanned by bridges as perishable as they are ugly. Of late years public attention has, indeed, been directed to the subject of water-fronts, and much has been done to secure them, in the outskirts of great cities, against the disfigurement that has overtaken them in portions already built. The parks at Chicago have been laid out with a wise sense of the value of the lake-frontage. Boston has claimed for similar purposes certain stretches of the Back Bay Shore, and New York has constructed Riverside Drive and bought the water-front near Pelham. But there is need that more should be done in this direction and that we should learn from older countries the art of beautifying the water-fronts we are beginning at least to reserve. All foreign countries are full of examples of this art, whether it has been employed merely to dignify reaches of shore that must be put to commercial use or to create ornamental promenades and gardens. The quays at Antwerp are as good in their more prosaic way as the Thames Embankment in London. The Elbe at Dresden is not defaced by the structures that line its banks, though they are not all terraced promenades, but include steamboat-landings, private grounds, hotels and restaurants. At Rouen the chief hotels look out on a river crowded with shipping, yet look on a scene devoid of squalor or architectural meanness. At Lyons the great stream rushes between close-pressed ranks of tall buildings, yet a fine drive runs by it in many places, and everywhere the shore is agreeable to look upon. At Prague there is a truly magnificent series of wide esplanades upon which some of the finest buildings in the city have been placed, and a succession of bridges where the newest wrought-iron span does not seem out of artistic keeping with the famous great stone bridge which, until some of its arches were swept away last summer, had stood intact since medieval times. And so one might pass from land to land and town to town, only to find that everywhere the water-front is valued and everywhere is intelligently treated, with parks or avenues if possible, and if not, at least with respectable buildings and cleanly shores.

The picture we give on p. 200 shows a peculiarly charming treatment of a water-front. As possessing the only public gaming-house still open in Europe, Monaco would in any case attract a multitude of visitors. But its development would never have been so great, and it would never have drawn thousands of tourists who do not come for the sake of gaming, had its situation not been so marvelously beautiful. The town itself, and the promontory of Monte Carlo where the Casino stands, overlook from their rocky heights the vast blue expanse of the Mediterranean, and the gift of nature has been sedulously enhanced by the intelligence of man. The drives along the cliff-edge are admirably planned, and, like the Casino gardens, show what may be achieved when architecture and horticulture are combined by an artistic hand. Monsieur Edouard André, the famous French landscape-gardener, never did a better piece of work than here, and the effect of his planting has been increased by the skill of gardeners who have caused Palms and other exotic plants to grow with extraordinary luxuriance. The treatment is somewhat formal, as befits the neighborhood of stately buildings and the presence of perpetual crowds of visitors. But there is no monotonous regularity in the arrangement either of the terraces and balustrades or of the sub-tropical plants which give such a singular charm to the spot in the eyes of travelers fresh from the wintry north. We can imagine what such a shore would be were this an American watering-place. It would doubtless not be given up to utter neglect and dishevelment, but a wooden paling would probably replace the marble balustrade, board walks the gravel slopes and marble steps, badly chosen trees in inharmonious variety the orderly avenue, and a stretch of Coleus-beds the beautifully grouped shrubbery. Of course, the exact treatment appropriate at Monaco would not be appropriate in a northern American watering-place; but something of the same orderliness, dignity and beauty ought to be secured far more often than it is. And while, in American country places, picturesqueness, rather than symmetrical stateliness, is usually appropriate, there are cases where it would be best to try for the more formal architectural charm which distinguishes the Casino gardens at Monte Carlo.

How We Renewed an Old Place.

IV.—CLEARING UP.

THE forlornness of an old, neglected farm is largely owing to the condition of its trees and shrubs, which, being left to themselves, take on a tumble-down, half-dead look that often belies their real condition. A few decayed trees bring all the others into disrepute, like a grog-shop in an otherwise respectable neighborhood, and untrimmed shrubs are as unbecoming as unkempt hair.

When we came to examine matters at Overlea, as we named our acquisition from its command of the meadow, we found that a good sweeping and dusting would do wonders for it, and with that enthusiasm for setting to rights inborn in the New England breast, we prepared for a grand redding up.

While the grading of the knoll was going on preparatory to building the house, our factotum, appropriately named Blossom, since his function was to adorn the place, was busily employed in removing all the unsightly dead limbs from among the live ones, and in hewing down such old Pear and Apple-trunks as proved hopeless.

The logs and branches were dragged away to the wettest place in the meadow at the back of the knoll, and transformed into a corduroy road, by which one could pass dry-shod out into the rear street. This floating rubbish, supported by the tangled grass on the marsh, formed a foundation upon which, after inserting a plank water-way at the bottom, for the ebb and flow of the tide, we subsequently built a substantial carriage-road of stones and gravel, which now affords a back entrance to the stable and kitchens.

The palings of the fence were removed for kindlings, but the posts and rails were left to form a slight boundary until the hedges and tree-rows should be fairly established; the straggling shrubs were trimmed into better shape, the Box-arbor clipped and cleared of weeds, trailing vines were taught

once more the use of a trellis, and the grass was mown and raked clean of the last year's rowan.

Fierce war was made upon the Burdocks and Mint and Horse-radish that had squatted everywhere on the land; load after load of the accumulated rubbish of years was buried under the corduroy road, and hidden from view with gravel; the Pear-trees we carefully pruned and tied up, and the old Grape-trellis stiffened with new posts and lattices.

When all this was done, and it was no brief job, the place took on a civilized air truly surprising, but, like the boy's washing his face, which cost his father a thousand dollars, the felling of the first ragged old tree was an entering wedge of improvements that find no end.

The clearing up revealed unsuspected beauties and possibilities in the old place, and at the end of it we had taken an account of stock, and were aware that we had become owners of a treasure-house of enjoyments. But the charms and wealth of that old garden are "another story" which remains to be told later.

While all this spring and fall cleaning was going on, the heavy labor of grading was in progress. Teams and men were coming and going, heavy scrapers were plowing part of the little knoll down into the valley, and loads of gravel were being dumped to bring the slopes into proper form, the surface soil having been first removed to cover the future lawn. Week by week the work went on, till the very landscape changed its contours, as the removal of the crown of the knoll threw open to view, from the sidewalk, the fine sketch of green meadow and blue stream, once hidden from view by its cone.

When our much-interested critics found that we had chosen the site for our dwelling in an unexpected part of the grounds, their murmurs again reached our ears.

"Why in the world don't the doctor build up on top of the hill, where he can see everything, and be among neighbors?" sang half the chorus.

"If I had a lot of big trees like those Elums I'd get the 'good of 'em, and put my new house on the old cellar," echoed the antiphonal.

"Never can make anything better 'n a Shumack-bush grow in that gravel-pit," shouted they all together.

"Well, perhaps he knows what he's about," would interpose some friendly voice; "but it wouldn't be my way, anyhow. He'll find out, come to plantin', that he's got to have soil, even for a door-yard."

When it came to building the foundations, their distance from the highway seemed inordinate to most of these critics, but now and then we were reproached by the more ambitious for not leaving front enough. In fine, we came to be in full sympathy with the Old Man and His Ass of the fable; but being luckier than he in having a mind of our own, we did not end by pitching house and all into the water, as we might have been tempted to do from the multitude of counselors, in which, in spite of Solomon, there is not always wisdom.

Our firm conviction was that the hill, in spite of the commanding view toward the north, was too bleak and exposed a position to be pleasant for an all-the-year-round home; it was also too near the neighbors' lines, and too remote from orchard and garden.

On the other hand, tempting as the great Elms certainly were on a hot summer day, the lot at that end of the farm was quite too narrow for a house and stable such as we required. The knoll, though limited in area, gave us plenty of elbow-room, and from its elevation we overlooked the grassy swale on one side, with the hill for a background, and northward could view the ever-changing tints of the meadow, behind the gardens and the fruit-trees. Experience has confirmed the wisdom of our choice, and, in justice to our advisers, I will say that they now handsomely admit that, though they "didn't think much of the doctor's ch'ice, to begin with," they are now convinced that "he has got about the likeliest lot on the street."

Since publishing the first of these papers I have received various inquiries with regard to some of our experiments, which, perhaps, it would be well to begin to answer here, before going farther. One of the questions, which concerns the Willows, asks whether we are to make a hedge of them or allow them to grow up into trees. "If you allow the Willow-trees to grow up," asks my correspondent, "won't they shut off all your views; and if you don't allow them to, won't the labor and trouble of cutting them back every year be serious?"

In reply to this I would say that we do mean to let them grow into trees at their own sweet will, at least for the present. The knoll is so high, and the slope of the ground, from the foot of it to the edge of the place, so decided, that our veranda-floor is some twenty-five feet above the level where the Willows are set, so that they can grow for some years to come without becoming an annoyance. They are also quite a long distance away, as the line runs diagonally between us and the meadow. Should they ever become a serious obstruction, polling once in five years, we think, will keep them where we want them, as from our elevation we can look directly over the top of a very tall old Apple-tree which stands at the foot of the slope near the house, and a Willow in the distance will have to be quite a tree to be really troublesome. A vista cut here and there in the line will really enhance the charm of the prospect, but at present they are not more than fifteen feet high.

Another inquiry comes with regard to the preparation of the soil on the hill for the Pines.

Unfortunately, we did nothing in the way of making a bed for them beyond the process I have described. No doubt, they would have fared much better for a little feeding and more of them would have lived, but the hill was very steep and hard to get at, even with a wheelbarrow; and, besides, we had no soil to spare, for we needed everything we could get for the lawn and did not care to buy any for so doubtful an enterprise. We, therefore, tried our experiment under the sternest conditions. However, those tiny Pilgrim Fathers of the future forest stood the trial like little men. Some of them, it is true, died of consumption, and some of fever; but the survivors are growing tall and stout on their poor pickings and will do us credit yet.

There is one of them, nicknamed Episcopus, from its birthplace in the church lot, which is a beautiful illustration of that fable called Nature and Education, in "Evenings at Home," a book which was the delight of the childhood of a previous generation and an infinite bore to the present advanced infant.

I spied the poor thing one day hanging by one root to the side of a sand-hill, which was being graded to a smooth slope, and asked the men who were working there to let me have it. Though much ridiculed for its shapeless and unpromising aspect, it was given a comfortable shelf pretty well down on the slope and coaxed to hold its head up by various devices. Unused to kind treatment, this wayside waif, which had got used to growing nearly upside down, hung its head and sidled up against the hill, and seemed to find its branches as much in its way as the legs and arms of a guttersnipe in a parlor; but time and training and the neighborhood of Boston have their influence even on a Pine, and that clerical tree is now a very Bishop in erectness and dignity, having been lopped and pruned and tied to stakes till it puts the most symmetrical of the other Pines to shame by the vigor of its development, proving that if anything can "beat Nature" it is Education.

The consolation of a limited number of trees is that each one acquires an individuality, and their owner gets to know them as a shepherd does his flock. I wish every one could learn the way in which these little growing things take hold of one's interest, and people life in the country.

The forester of ever so minute a wood has a fund of enjoyment on his plantation that no unlimited order to the best of landscape-gardeners can ever give him. It is a fine spiritual exercise to bring the mind into sympathy with inferior organisms, and when one has fairly learned to love anything so stubborn and irresponsive as a tree, he has gained a step in mental development, even beyond that point won by a sympathetic understanding of his brother man.

However fond one may be of a flower-garden, I doubt if it ever yields quite so sturdy a satisfaction as the culture of trees. It is the difference between bringing up a girl and a boy—one all light, color, sweetness, a thing to be cherished and tenderly sheltered and nurtured; the other less outwardly winning, more obstinate in development, more independent and manly in habit, but more worth while; of positive pecuniary value when well grown; and formed, when symmetry and breadth are fully attained, to be of service in sheltering the weak and weary who seek protection in what Mrs. Gamp would call "this wale."

Hingham, Mass. *M. C. Robbins.*

Winter Studies of the Pine Barren Flora of Lake Michigan.—II.

IN some of the sphagnous bogs, or in the shallow water of sloughs on which the Peat Mosses encroach, we shall come on another shrub of the Heath family, *Cassandra calyculata*. Wherever found it grows in the greatest profusion. It is not quite an evergreen, but its oblong leaves are very persistent, and of a thick texture, giving it its common name, Leather-leaf. They fade to a yellowish or straw-colored hue in the winter, though some are purple or purple-tinged. The numerous ascending leaves are closely appressed to the stem at this season. This exposes their scurfy lower surfaces, cov-

ered with brown scales, an interesting feature of epidermal structure when examined by a magnifier, and a pretty object for an opaque mount. The stems of the Leather-leaf are about two feet high, and end in slender tips clothed with small leaves. These bear the flowers in the early spring, for it is one of the earliest to bloom. They are also peculiar in bending away from the axial line of the stem with a moderate curve, giving a graceful turn to the extremity. The Cranberry nearly always accompanies the Leather-leaf, but is not so restricted in range or habitat. It is seen in other localities, sometimes in the wet sands, where it seems to do well, showing a natural basis for the different conditions to which it has been subjected in cultivation. The species is *Vaccinium macrocarpon*, and the berries of all the vines I have seen here are spherical. They are scarce in winter, having been picked for market, or more often for domestic use, since the areas covered are too small to make their gathering of much profit. But when seen, there are few handsomer fruits than these large red or flesh-colored berries hanging from a slender stem, and made prominent by the pale sphagnous Moss among which the delicate vines creep. They are darker-colored in the winter, and the frost takes away some of their acidity. The small glossy leaves are changed to a light purple, and, as in Cassandra, are frequently turned so as to expose their lower surface, in this case smooth and glaucous.

There are other humble evergreens, almost herbaceous in character, but with leaves capable of enduring the cold of winter. They are mostly *Ericaceæ*, and are visible when the ground is bare. One of these is the Prince's Pine (*Chimaphila umbellata*). Its thick and glossy leaves, clustered on the short stems so as to form a kind of rosette, are as green and shining as in the summer. Very rarely I have found the other member of the genus, *C. maculata*, in the shade of Pines and Cedars. Its leaves, mottled with white blotches, do not shine like those of the other kind, but furnish it with one of its chief characteristics. The Checkerberry, or, as it is better known with us, the Wintergreen (*Gaultheria procumbens*), is abundant in suitable locations, generally in the shade or where the sand is damp. The leaves on some of the stems are green and glossy, but on many they have changed to a dark or vinous purple, so that a patch of these plants is quite variegated, but not as much so as in the case of the Bearberry. They are often furnished with scarlet berries, only partially hidden by the leaves, which adds to their variety and gives them prominence for fruit as well as leaves. This remains upon the plants till spring, and is frequently gathered for market, rather for its bright color and pleasant, spicy taste and aromatic flavor than as an article of food. Similar to the Wintergreen as to its scarlet berries, but quite different otherwise, is the Partridge-berry (*Mitchella repens*). This small trailing or prostrate vine, but a few inches long, is rare in the Pine-woods, growing sparingly on the richer shaded knolls, or creeping beneath the evergreens, where the soil is most productive. I find it oftener in this vicinity in the hard-wood forests, with a soil of clay or loam, in which it commonly takes the drier knolls as a place of growth. The leaves are green and shining, small, roundish and opposite. Its curious double drupes, of a sweet and pleasant taste, stay upon the vines a long time if they escape the notice of birds, and when in flower in June the fruit of the preceding year may be obtained.

Several kinds of Pyrola will be found when the ground is free from snow. As in Chimaphila the leaves are clustered near the ground, from the midst of which they send up a flower-stem in summer. The leaves are mostly oval or roundish, and often large for the size of the plant. *P. rotundifolia* has shining, coriaceous leaves, round or broadly oval; *P. elliptica* thinner and more delicate leaves, more elliptical in outline. But the two species are very closely allied, and appear to run together in their leaf-characteristics, both as to shape and texture, so that it is sometimes difficult to identify the species, the specific names not being diagnostic in this respect. Both species are common. *P. chlorantha* is much rarer, its small round leaves, rather thick and dull, so well characterizing it as to make it easy to determine in the winter-time. So of *P. secunda*, well marked by its thin, ovate, finely serrate leaves, more scattered on the low stems, and but little shining. Though met with more frequently than the last, it is somewhat rare. Both of these are more delicate plants, and with smaller leaves, than the two first mentioned. The conditions of growth of all are essentially alike, though *P. secunda* may affect drier situations, and *P. rotundifolia* those more damp than are habitual to the rest.

Another small plant with very bright fruit is seen now and then, the Dwarf Cornel, or Bunchberry (*Cornus Canadensis*). Its compact bunch of red berries, at the top of the low stems, is very prominent, and, since there are no leaves to hide it, the ground is fairly red where they grow in beds. It falls an easy prey to birds, which are very fond of the sweet and palatable berries. One more pretty evergreen vine sometimes delights the eye when a spot thickly covered with the slender, trailing stems of *Linnæa borealis*, the Twin-flower, is found. It grows in the dense shade of evergreens, and the tangled and matted stems, with small, roundish leaves, almost carpet the ground, and afford the botanist in themselves and their associations one of his choicest plants. This and the Dwarf Cornel, together with the stemless Lady's-slipper (*Cypripedium acaule*), when all are found in the cool, damp woods in blossom about the same time in early summer, bring to mind more vividly than any other plants in the barrens scenes from woods farther north. The places where they grow with the surrounding Cedars and Pines seem like spots taken from the foot of Lake Michigan and transferred to its head.

Englewood, Ill. *E. J. Hill.*

New or Little Known Plants.

Aster Tartaricus.

THERE is more pleasure to be had in the open air in North America in the autumn than at any other season of the year. It is the time of all others here to enjoy the garden and the woods, and we should lose no opportunity to increase the number of plants which are at their best at that season, and which can be successfully grown in our climate. There are many plants which are more beautiful in the autumn than at other times on account of the colors their leaves assume toward the end of the year, but there are not a great many which bloom in the autumn in comparison with the number which expand their flowers in spring or in early summer. Thanks, however, to Asters and Golden-rods the list is a fairly long one, and the flowers with which these plants enliven the autumn landscape are not without variety of form and of color.

It is desirable that they should be better known and their value for the garden appreciated more fully than it is now, in this country at least; and with this end in view we have already published figures of some of the handsomest and most distinct American species. The illustration in the present issue (p. 197) represents the end of a branch of one of the few Old World Asters known in gardens. It is an Asiatic species, and excels all the American Asters in the height to which it grows, in robustness and in the great size of the lower leaves, sometimes more than two feet long, and like the leaves of some great Silphium or Inula. The leafy stems, which are not developed until the end of summer or the beginning of autumn, shoot up rapidly sometimes, if the plant is well fed, to a height of six or seven feet, and then branching produce at the ends of the branches, which form immense, long, rather loose panicles, large, bright-colored, blue or purplish blue flowers. These do not open until the end of October or early November, or not until the flowers of all but two or three of our American Asters have passed; and if the season is favorable they continue to open until almost the end of November. A sheltered position must be selected, however, if flowers from the open ground are expected anywhere in the north after the middle of November, except in years when the coming of winter is exceptionally delayed.

Aster Tartaricus is blessed with a good constitution and a rapacious appetite; and it needs strong feeding and a deep soil into which to send down its long, stout roots; and, like most perennial plants, it gives the best results when the great clumps it soon spreads into are occasionally lifted, divided and reset in fresh soil. Treated in this way, this really noble plant will not fail to do justice to itself and to delight the owner of the garden who is fortunate to possess it, and his friends.

Aster Tartaricus is one of the best hardy herbaceous plants for supplying cut flowers for large decorations at the time of the year cut flowers are most difficult to obtain.

Foreign Correspondence.

London Letter.

Iris Robinsoniana.—The flowering of this plant at Kew is an event of considerable interest to English horticulturists, to whom its exceptional size and beauty were long since made known by botanists, but its flowers have never before been produced in England. It is larger in leaf and inflorescence

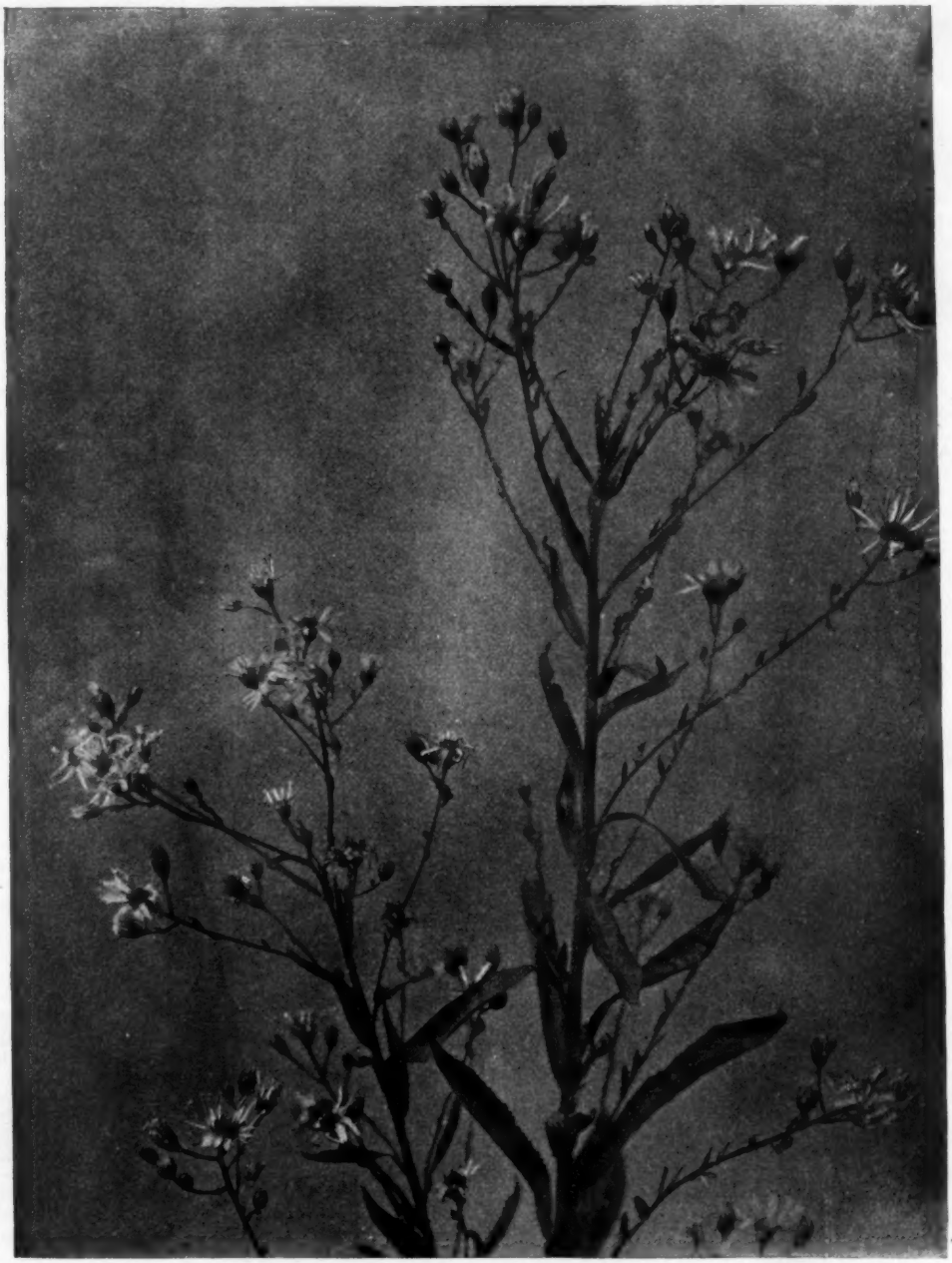


Fig. 35.—Aster Tartaricus.—See page 196.

than any other known Iris, the plant at Kew being seven feet high and six feet through, the leaves eight feet long by four inches in width, gracefully curved near the top and of a healthy glaucous green; they remain fresh on the plant several years. This specimen is growing in a sunny, airy position in the house where Agaves, Aloes, Dasylirions, etc., are grown, and it is planted on a raised mound which is kept fairly saturated by drip from a water-tap close by. It is about six years old.

The flower-spike is from five to six feet high, branched above and producing from 120 to 200 blooms which expand in slow succession, remaining open only a few hours. This species is a native of Lord Howe's Island, where it was found by Mr. Charles Moore, Director of the Botanic Gardens at Sydney, when on a visit to that island in 1869. In his report he stated: "A large Iridaceous plant, called the Wedding Flower, was found sparingly in two or three situations. Of this seed vessels only were obtained, but the flowers are described as very beautiful. . . . In appearance it resembles a large Morœa, but will probably prove a new genus." Bentham described it under the name of *Morœa Robinsoniana* in the "Flora of Australia." The expanded flower is about four inches across, pure white, except at the base of the larger segments, where there are some lines of golden yellow.

It is remarkable that a solitary species of Iris should occur in a small island off the east coast of Australia, thousands of

miles away from any other member of the genus; for there is no species of Iris in the Australian continent, nor anywhere nearer than China. The South African *I. bicolor* (Dietes) and the North African *I. stylosa* are the most nearly related to this giant from Lord Howe's Island.

The Kew specimen is as ornamental without the flowers as the New Zealand Flax, *Phormium tenax*, and in countries where severe frost is not experienced the Iris would, no doubt, prove equally serviceable as a specimen for lawns, etc., as the Phormium is here.

According to an account of this Iris, published in the *Gardeners' Chronicle* in 1872, by Dr. Bennett, it appears to have first flowered under cultivation in the Sydney Botanic Gardens in 1871. It also bloomed in the hill gardens at Hakgala in Ceylon in 1885, and in the gardens of Mr. Dorien Smith, at Tresco Abbey, Scilly, in 1886.

Phajus Cooksoni ×.—The stock of this beautiful hybrid has been secured by the Messrs. Sander & Co., of St. Albans, where some of the plants are now finely in flower, some of the spikes being over two feet in height, and as stout both in stalk and flower as *P. Wallichii*. Evidently, Mr. Cookson's latest fine production is a first-rate garden Orchid, as it has consistently grown and flowered from the first as freely as one need wish, in this respect partaking largely of the nature of *P. Wallichii*. Of the other parent, namely, *P. tuberculosus*, the hybrid appears to have inherited only a large share of its beauty without any of its "miffiness." As Mr. Sander says, we need no longer bother about *P. tuberculosus* now we possess *P. Cooksoni*. Unluckily, however, the "we" in this case is only Messrs. Sander & Co.

Dendrobium Venus ×.—This beautiful hybrid was raised by Mr. N. Cookson from *D. nobile* and *D. Falconeri*, and flowered for the first time in May, last year. It is now again in flower at St. Albans. The habit of the plant is intermediate between the two parents, and it appears to be as free in growth as *D. nobile*. The flowers are as large as the largest *D. Falconeri*, and similar in color, but minus the yellow disc of the lip. Altogether, *D. Venus* is a distinct gain, and is certain to take a foremost place among the best hybrid Orchids of artificial origin. Mr. Cookson, evidently, does not waste his time and skill in operating upon Orchids that cannot produce anything worth having. He has raised two of the finest hybrids yet seen, namely, *Phajus Cooksoni* and this Dendrobium, besides many other beautiful things.

High-priced Orchids.—A portion of the collection of Orchids formed by Mr. Pollett, the well-known horticultural printer, was disposed of by auction in London this week, and some of the plants realized exceptionally high prices. Among them were *Odontoglossum crispum*, var. *Leopardinum*, a small and not very healthy plant, which sold for 100 guineas; *O. crispum*, var. *lilacinum*, fetched eighty guineas; *O. elegans*, thirty-eight guineas; *O. excellens*, thirty-six guineas, and *O. Hallii*, var. *magnificum*, thirty-four guineas. Several other varieties of *O. crispum* sold well; for instance, one called Bonnyanum, for nineteen guineas, Bickleyense for sixteen guineas, Pollettianum thirty-seven guineas. *Cypripedium Morganiæ* realized thirty guineas, *C. Schroederæ* seventeen guineas, *C. leucorrhodum* eighteen guineas, and so on. The unusual success of this sale is attributed largely to the colored illustrations of the best Odontoglossums printed and circulated along with the sale catalogue. Of course, Mr. Pollett's excellent judgment as an Orchid connoisseur, which led to his collecting only what is best among Orchids, gave buyers confidence. Scarcely any of the plants were what would be termed large specimens.

As a set-off against the high prices paid for choice cool Orchids I may mention the miserable prices realized by a large sale of East Indian Orchids from the collection of the Duke of Marlborough at Blenheim, which were disposed of by Messrs. Protheroe & Morris a few days ago. Big specimen Vandas, Ærides, Saccolabiums, Angræcums, Cypripediums and other tropical Orchids were sold for less than the pots containing them had cost, and they were good healthy plants, too. A democratic acquaintance remarked that buyers were justly boycotting a nobleman who had entered into competition with the struggling dealer, an allusion to the well-known trading character of the Blenheim collection.

Hippeastrums.—The collection of these plants in the Chelsea nurseries of Messrs. J. Veitch & Sons is now one of the great horticultural attractions in London. A large span-roofed house is entirely filled with the plants, and they now carry over three thousand scapes of flowers. The effect of these when expanded is magnificent. Every year brings new and improved varieties, the successes of last year being eclipsed by the successes of this. New crosses are made, seeds sown, and the bulbs grown on year after year, so that the thousands of plants sold are replaced by a successional lot, and there is never a gap. The brilliant results obtained in this field by Messrs. Veitch place them a long way ahead of all other breeders and growers of Hippeastrums. I have heard it whispered that the profits of Hippeastrum culture have proved exceptionally satisfactory at Chelsea. Apart from their commercial value, these plants, when well managed—and, according to Messrs. Veitch, few bulbs give less trouble—are almost without a rival among in-door bulbous plants. I am told that enterprising planters in the West Indies are buying some of the best of these plants for extensive cultivation under the favorable conditions afforded in some of those islands, with a view to supplying the European and American markets with Hippeastrums by the thousand.

London. *W. Watson.*

Cultural Department.

The Reticulated or Sponge-bearing Cucumber.

UNDER the name of "Luffa," or "Cucumber Sponge," we now import in compressed bales, from Japan and Egypt, the reticulated skeletons of two varieties of what Ebn Baitar, the Arabian botanist, twelve hundred years ago described as the "Luffah," taking his title from the Egyptian name of "Luff." Dr. John Veslingius, of Holland, in 1638, in writing a work upon the plants of Egypt, as a sequel to that of Prospero Alpini, describes, with two engravings, the Cucumber-plant that now furnishes the commercial Luffa of Egypt, under the title of *Luffa Arabum*, or *Cucumis reticulatus Ægyptius*. The Japanese and Egyptian commercial varieties so closely resemble each other that the pictures of Veslingius, which were taken from plants grown by himself, are excellent representations of the Japanese *Luffa macrocarpa*. Had he cultivated the Japanese variety, which comes to maturity much earlier, he would not have fallen into the error of describing the seeds as white instead of black. From a very early period the reticulated skeletons of *Luffa Arabum* were used by the Egyptians in their bath-rooms, and it is probable that the Japanese did the same with that of the *L. macrocarpa*.

Sponge-bearing Cucumbers may be found in a large number of hot countries, and vary in size from that of a plum to three feet in length. In some the skeleton is very thick and strong, and capable of being made of use in the household, but in the majority the netting is thin and delicate, and can only be regarded as a curiosity. Like ordinary Cucumbers, some are edible, and are grown for the table, while others are more or less medicinal, and are used as domestic remedies. As the reticulation forms at a late period, the Luffa, when of an edible sort, can readily be cooked as a vegetable when young; the rank odor of the fruit would be an objection to its use with us, but this has not availed much against the tomato.

But little attention has been paid by botanists, either ancient or modern, toward collecting, arranging and describing the class of cucumbers which is distinguished by bearing a subcutaneous or a complete internal skeleton. Under the name of Momordica, Cucumis, Pepo and Luffa we may find several varieties described in old botanical works, chiefly in Latin, Dutch and French; and may also discover that several, as the *Luffa Petola*, *L. acutangula*, *L. Ægyptica*, etc., have been very correctly represented by large plates.

The Luffa is fully entitled to membership in the Cucumber family, and is in no sense a Gourd, as it has sometimes been called. It is monœcious, having separate staminate and pistillate flowers, of which the former are much the larger, or more conspicuous; and the leaves much more closely resemble in form those of our common cucumber than do many in Egypt, Palestine and India, upon plants producing the best table varieties, some of which are much more like Cantaloupe-vines than Cucumbers, as we know them.

My first trial in growing Luffa-seeds was a failure, because I made the attempt with a variety that required so long a season in which to perfect its net-work, that frost came, even before it had begun to form. The fruits grew half a yard in length, and the vine was vigorous, but the season required was too long for this latitude. My second venture was with the *L. macrocarpa* of Japan, which produced fully matured fruits in five months from the day of planting. This is the best sort to grow in a temperate climate, and bears the most symmetrical of all the sponge cucumbers; the fibre of the netting is coarser than that found in the Egyptian variety, and not so well adapted for use as a scrubber in bathing. *L. macrocarpa* bears cucumbers from thirteen to fifteen inches long, and some of them are very nearly straight. The vine is a vigorous

grower, and, in favorable seasons, bears a fair crop of cucumbers. In very dry weather there will be a scarcity of pistillate flowers until after a supply of rain, when they will appear in almost every joint. The cucumbers develop rapidly, and, but for the slow growth of the vine in the early season, would come to maturity in large proportion; as it is, however, there will be many fruits that will only be partly grown when frost arrests their development. Much time may be saved by having the plants grown a yard or two in height in a greenhouse, and then setting them out on the 10th of June; as the plant is tropical, it will stand the full heat of the sun all day without drooping, and grow all the better for it. My best success came from planting against a trellis on the south side of a wooden building, with an all-day exposure to the sun.

Next to *L. macrocarpa*, the wild Cuban does the best in Philadelphia, as it comes to maturity early, and grows much larger than in its native island. The Egyptian variety grows well and sets many fruits; but these are late in maturing, so that as yet I have not produced any with black seeds. The Petola I have not tested yet; it looks promising in its picture, and is one of the few that produce a good reticulation. A hybrid between the Japanese and Egyptian varieties might readily be produced with a brush, and, theoretically, should be finer than the Japanese in its netting, and shorter-seasoned than the Egyptian. Hybridization should be produced each way between the two parents, and plantings tested with seeds from several experiments, as this way of producing new varieties has much uncertainty in its final results.

The first Luffa sponges sold in this city were grown from Cuban seed; the second came from Japan, and the third from Cairo, in Egypt. Japanese seed were grown in Louisiana before there were any sponges of *L. macrocarpa* for sale here, and my first stock came from that state. Under the name of the Bonnet Gourd and Dishcloth Gourd, this and the Cuban Luffa are now well known in several of the southern states, although, as I have stated, the name of Gourd is a misnomer. Bonnets are sometimes made from the opened sponges, shaped out with some woven fabric, but the entire head-covering was not produced of the net-work until the large white Luffas of Egypt furnished the material for cutting and fitting.

The *Cucumis reticulatus* of Egypt is grown in large quantities, and has become quite an article of commerce, being exported mainly to England and Germany, the packages containing 1,000 to 1,500 each; but a small proportion of these are sponges of the whiteness and quality that indicate a proper care in preparation. When a sponge cucumber is dried whole the netting is easily separated; but its fibre will have a brownish color and will have lost much of its tensile strength. Naturally, the reticulation is of silvery whiteness, and this can only be preserved by a proper method of cleaning it from rind, seeds and pulp when the cucumber is matured, but still green; and the whole must be done at one operation or the sponge will change in color. When a luffa has reached its maturity of growth it will be known by its green rind lightening in color and becoming more dry; it should then be cut off and hung up in the house for a week or more until the juice in large measure dries out of the rind. The cucumber should then be pared and the cap at the lower end removed, which will open the seed channels; it should then be kneaded and squeezed under a large pan of hot water until the seeds and pulp are washed out. When fully ripe the seeds are jet black, and will number from 400 to 600 in very large fruits. When the reticulated skeleton has been well cleaned, hang it up on a pin-hook and string to dry in-doors, when it should become of silvery whiteness and weigh three-quarters of an ounce to an ounce.

By exposure to the air, even when kept in darkness, the whitest luffa-sponges gradually change to a light orange-yellow. This color is largely soluble in hot water with soap, and much of it may be washed out, leaving the fluid of a decidedly yellow tint and the sponge much lighter in color. Sponges in frequent use become of a light grayish white tint and slowly weaken in fibre, particularly in the outer or circular layer, which is not so tough as the internal longitudinal one. The sponges are quite durable when compared with those obtained from the sea, and are odorless when well washed; no fabric when wet has as decided an effect as a rubefacient upon the skin, and care must be taken that it does not take too deep a hold where the surface is young and tender. For delicate skins and children the immature skeletons should be selected, or the small end of the mature ones, which is much finer in fibre than the base.

My record of varieties in the *Cucumis reticulatus* amounts to twenty, and these belong to Japan, Moluccas, China, India, Africa, Spain, Cuba, Brazil and Mexico. The tests thus far made go to show that but very few of the varieties will perfect fruit in this latitude, and that it is useless to grow the others, except for ornament or curiosity. The Macrocarpa stands at the head of the list, as it has been repeatedly grown; the Acutangula, as a curiosity, grows equally well; the Cuban comes to perfection; and by starting under glass, the Egyptian may likewise; the Petola and Mexicana are yet to be tested in a favorable season. Some others have grown well, but the character of the cucumbers does not make their propagation desirable.

The plants designated are quite ornamental and interesting, with their beautiful leaves, large staminate flowers and hanging fruits, borne sometimes as high as a second-story veranda. The Egyptian flower is about four inches in diameter, and others are nearly as large. The staminate-buds grow in bunches and bloom singly, so that the vines are constantly in flower; all of the blossoms are a bright yellow. The pistil of the productive flower develops into the point of the cucumber, and the long ovary into the fruit, the sepals of the blossom long remaining attached.—*Dr. R. P. Harris before the Pennsylvania Horticultural Society.*

Some Early Native Flowers.

AMONG the first of our wild flowers to bloom are two which are somewhat similar. One the Wind Flower (*Anemone nemorosa*), the other the little Rue Anemone (*Anemonella thalictroides*). So far as their individual attractiveness is concerned it would be hard to choose between them. Both are charming little plants, with white or pinkish flowers about an inch wide, the former ranging rather further to the north than the latter. In transplanting, the latter is much the easier to manage, and, if taken up at almost any season, it will thrive in any ordinary soil. The Wind Flower demands more care, preparation of soil, and is most safely moved in late summer or early autumn. It needs more time to become established than the Rue Anemone. The best soil for such a plant is the one as nearly as possible like that which it naturally selects, namely, a dry loam. When this is not at command a compound of sand, leaf-mold and clay, in about equal parts, well placed under and around its roots, is a good substitute.

Our two Hepaticas (the one with round, and the other with sharp-lobed leaves) have long been appreciated abroad. The first has a variety of tints, from a blue or purple to almost pure white. The other has about the same variety of color, with the addition of pink. Well-established clumps of them in a thinly shaded situation make a display of early bloom which can hardly be excelled by any plants of their season. They like a clay loam with a moderate amount of well-decayed barn-yard manure mixed with it. The flowers will be much more satisfactory in thin shade than in the open sun or in a dense shade, though the plant will do fairly well in either. They may be transplanted at almost any season, yet it takes time for them to become well-rooted, and fairly at home.

The Dog's-tooth Violets, or Adders' Tongues, as they are often called—a term which, I believe, is more common in New England than in the west—are all early bloomers, and, with the several species and varieties from the Pacific coast, one or two from the south, our eastern yellow *Erythronium Americanum* and the white one (*E. albidum*), we have a fine representation of natives in this genus. They are always welcome harbingers of spring, not only because they are early, but because they have attractive flowers and foliage. *E. Hendersoni*, with its purple and yellow flowers, is probably the most showy of them all, but others from our west coast, such as *E. Smithii*, *E. citrinum* and *E. giganteum*, are also very attractive when in flower. From Texas we have a near relative to the white Dog's-tooth Violet, *E. albidum*, var. *coloratum*, which is quite hardy in New England, and is a much better bloomer that the typical plant. Its flowers have a purplish tinge. The proportion of flower-bearing bulbs of *E. Americanum* and *E. albidum*, even in their native haunts, is often very small, and in cultivation it usually grows more so, especially with the latter. In taking up the bulbs of these species I have noticed that the largest, which are usually the flowering bulbs, are generally at the greatest depth, often ten inches below the surface, and I believe that this is why, in cultivation, they are so inclined to divide up into offsets, one large flowering bulb making several smaller ones which do not bloom the second year. I have, in one or two instances, noticed that deeply planted bulbs were less inclined to divide up in this way than shallower set ones, and I think this habit may be partially overcome by deep planting. The best season for transplanting Dog's-tooth Violets is after their leaves begin to turn yellow.

Twelve species and five varieties of Trilliums are native to North America, all early bloomers, and each having special merits to give it interest in any collection. Some of the more showy, such as one would select for an early bed, if the entire list were not used, are *T. nivale*, *T. grandiflorum*, *T. sessile*, var. *Californicum*, all with white flowers; *T. sessile*, with dull purple flowers, but having very large, handsome and durable foliage, and *T. stylosum*, with pinkish white flowers. The white-flowered variety of the purple Trillium is also handsome. These are all easy of culture. The Painted Trillium (*T. erythrocarpum*) should be added as one of the finest, but it is the most difficult to grow, requiring deep planting, excellent drainage, and a light soil rich in leaf-mold.

The Spreading Globe Flower (*Trollius laxus*), with its abundance of creamy or greenish yellow flowers, should not be forgotten among the early bloomers. It gives variety of color, and the large flowers continue for a long time. It is quite desirable for a thinly shaded situation.

The Virginia Cowslip (*Mertensia Virginica*), with its handsome panicle of pale blue flowers and its rich dark green foliage, and the so-called American Cowslip, or Giant Cyclamen (*Dodecatheon Meadia*), with rose-colored or nearly white flowers, are both early and attractive species, requiring no special treatment beyond a rich soil and ordinary culture.

Botanical Garden, St. Louis, Mo. *F. H. Horsford.*

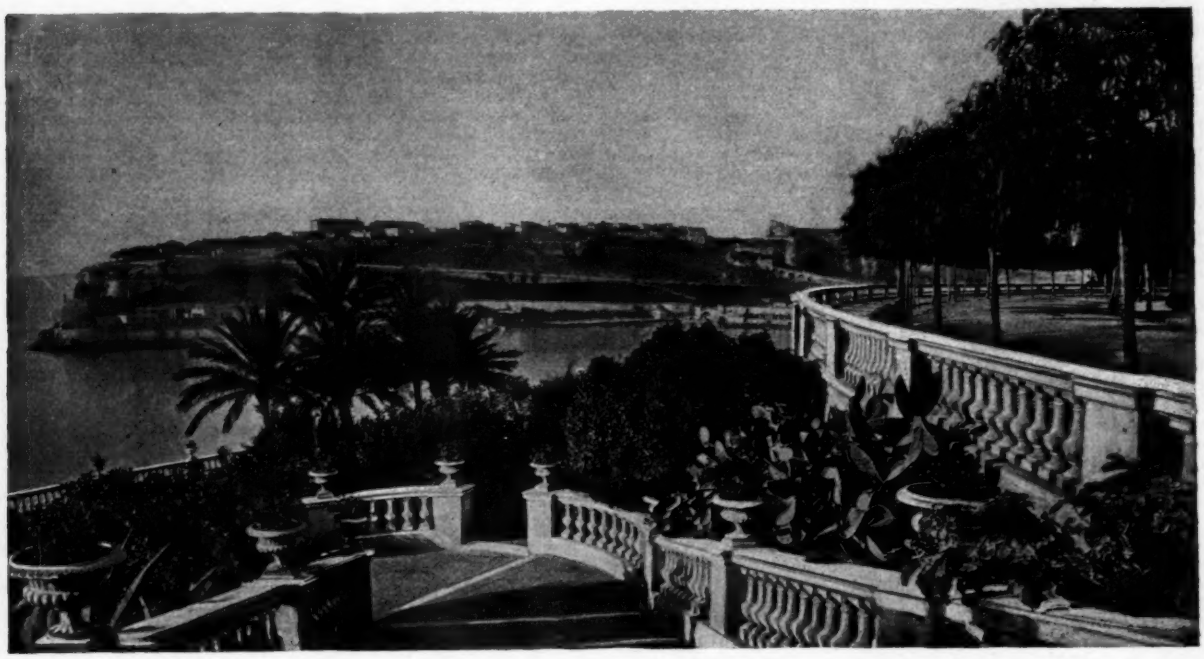


Fig. 36.—The Gardens at Monte Carlo.—See page 194.

The Snowflakes.

THESE plants belong to the genus Leucoium of the *Amaryllidaceæ*, a name derived from two Greek words signifying white Violet; and their fragrance is almost as strong and sweet, while the common name indicates their general resemblance to the Snowdrop.

The genus comprises some eight or nine species of bulbous plants, including those formerly known under the genera, Acis and Erinosma, only two or three of which, however, are worthy of general attention. The Summer Snowflake (*L. æstivum*) is one of the best. It is a native of southern and central Europe, and has been found as far north as the south of England. This plant is perfectly hardy in Massachusetts. It attains a height of from eighteen inches to twenty-four inches. The bulb is comparatively small and roundish; the leaves narrow and bluntly pointed. The fragrant, drooping, campanulate flowers are three-fourths of an inch wide, and appear in early summer, six to nine in a cluster, at the top of a spathaceous scape which equals the leaves in length. The perianth differs from that of a large Snowdrop in having all the white, green-tipped segments of equal length.

L. autumnale, the Autumnal Snowflake, is an elegant little plant, which, unfortunately, requires the protection of a slightly heated greenhouse or frame during the winters of this region, but it will doubtless prove quite hardy in more favored parts of the country. The oblong bulb supports three or four linear-acuminate leaves, about three inches in length, which usually appear, when the reddish scape has already attained its full dimensions, early in autumn. The flowers, usually borne two on each scape, are nearly half an inch in diameter, of similar form to those of *L. æstivum* and white in color, with a profuse display of deep rose around the base. The beauty of its tiny blossoms, combined with its free-flowering propensity, would render *L. autumnale* a very desirable addition to any garden in which it could be safely trusted. It is native on the sand-hills of Algiers, Spain and Portugal, and was introduced to cultivation from the latter country in 1629.

Still more attractive than either of the above species is *L. vernum*, the Spring Snowflake; it is the best of the genus, though hardly of such vigorous constitution as *L. æstivum*. The flowering season opens from two to four weeks later than that of the earliest Snowdrops; but it is much larger, and is, among spring-flowering plants, the gem of all the garden. It is from nine to twelve inches high; bulb oval; leaves six inches long by half an inch wide, obtuse; scape bearing one or two flowers an inch wide, but otherwise like those of *L. æstivum*. It is a native of moist, shady localities in many parts of central Europe, and was cultivated as early as 1596. A variety of this plant, generally named *L. Carpathicum* or *L. biflorum* in gardens, is distinguishable from the species in the very frequent occurrence of two-flowered scapes, and in the divisions of the flowers being tipped with yellow. It was introduced into England from the Carpathian Mountains in 1816. The plant is quite as pleasing as *L. vernum*, and it blooms somewhat later.

The Spring and Summer Snowflakes like good soil, partial shade, and a moist rather than dry situation. They are most effective when planted in large masses. Once planted, the latter may be left to shift for itself, but the less sturdy character of *L. vernum* and variety renders an occasional inspection of their bulbs a necessity. *L. autumnale* should be planted in pots, using sandy loam, where the winters are too severe to

permit of its exposure, and placed under cover until spring, when the pots may be plunged in a dry sunny position, such as is found in the elevated portions of a rock garden. Remove it to the greenhouse, or other place of security, again before frost, and propagate by separating the bulbs after the completion of growth.

Cambridge, Mass. *M. Barker.*

Palms.

THIS is a good time for repotting most Palms, except where a shift was given late in the fall, and even in such case the plants would be benefited by the removal of some of the surface soil and the application of a top-dressing of fresh compost. Some judgment is required even in the simple operation of potting. For instance, if the rapid growth of young plants is desired, the compost should be made rather light and rich by the liberal use of peat and old manure, a very satisfactory fertilizer, and one in good condition for potting, being the spent manure from an old hot-bed. When such manure is used it may be added to the potting-soil in the proportion of one-fourth of the whole mass. For plants almost large enough for their quarters the soil may be heavier and poorer, the deficiency of plant-food being made up with an occasional dose of liquid manure, which will serve to keep up the color of the foliage.

Light-rooting Palms, such as *Cocos Weddeliana*, *Latania aurea*, *L. glaucophylla* and some others, grow best in a soil largely composed of peat and sand, but, for a majority of the strong-growing kinds, a good loam, well enriched, will be sufficient. The drainage of the pots should always allow the free escape of surplus water, but, to secure this, a few crocks, properly placed, concave side down, will do more good than a handful that are thrown into the pot indiscriminately. The question whether firm or light potting is better for plants of this class can hardly be answered directly, for much depends on the character of the soil used, but moderately firm potting is usually good practice, although it must be borne in mind that the coarser the roots the more loose should be the soil, within a reasonable degree.

Some attention should now be paid to shading the houses, else some of the tender species will suffer, and as the growing season for most of the vegetable world comes on, new vigor seems to possess the various insect pests to which Palms are subject. The worst among these are the numerous varieties of scale, all of which are troublesome and are best dealt with by careful washing. Red Spider may be eradicated by thorough syringing, and Thrips by sponging with tobacco solution or by fumigation. Mealy Bug may be more easily disposed of than some of the varieties of scale, and in the same manner.

Most Palms enjoy thorough watering, and as more active growth takes place, a copious supply will be required by all well-rooted specimens. In case some particular specimen does not make satisfactory progress, owing to an unhealthy condition of the roots, it may be improved by washing out the roots and then repotting in as small a pot as possible. This treatment is, however, only recommended for plants of especial value, as the various species that are in common use are so readily and cheaply obtained that it does not pay to nurse unhealthy ones.

The species to which reference has been made above are notably handsome ones, *Cocos Weddeliana* being the most useful dwarf Palm that has been introduced to our gardens.

Holmesburg, Pa. *W. H. Taplin.*

Orchid Notes.

ARPOPHYLLUM GIGANTEUM.—Flowers are the attraction of most Orchids, but in the subject of this note these are supplemented by foliage of pleasing form and color. The massive spikes develop flowers profusely, and they keep in good condition about two weeks if the plant is kept in a cool, shaded house during the flowering period. It is a native of Guatemala and Mexico, and has been grown in England as an exhibition plant for many years past. The slender pseudo-bulbs, from eight to twelve inches high, bear at the top a single coriaceous leaf, from eighteen to twenty-four inches long by two inches wide, pointed, dark green, and elegantly arched. The spike is boldly erect, and emerges from a brown sheath, from four to six inches long, and beyond it the spike is some twelve inches long. The flowers are half an inch long by one-fourth of an inch wide, and closely packed on the portion of the scape above the sheath, as many as 150 having been counted on a space measuring five inches. They are not particularly interesting individually, but in the aggregate they form an attractive cluster, in which a reddish purple color, deepest in the lip, prevails. This plant is found growing on trees at a considerable elevation, and on this account it will not require a great amount of heat, a maximum temperature of eighty degrees during the growing season, with one of sixty degrees when the plant is at rest, proving sufficiently high. It requires plenty of light, a position close to the glass, and when in an active state a plentiful supply of water. The new growths appear simultaneously with the spikes any time between March and May, and they are often seriously injured by keeping the plants dry at that time in order to accelerate the development of flowers. The plant succeeds well in a basket, and it should not be allowed to shrivel with dryness, even after the completion of growth.

CATTLEYA AMETHYSTOGLOSSA.—The last flowers of this gorgeous Cattleya faded with the month of March, after having preserved their richness of color about four weeks. The plant is of striking appearance, and attains a height of some three feet. The erect scape protrudes from a greenish white sheath at the summit of the pseudo-bulb; it is scarcely more than twelve inches high, and two-thirds of its length is enveloped in the sheath, the flowers—twelve to fourteen in number, and each from three to five inches across—being arranged around the exposed portion. The oblong and pointed sepals are lilac-tinged, white, profusely spotted with rose; the petals are broader, rounded at the tip, and, with larger blotches of rose, similar to the sepals in color. The lip is deep purple, with numerous lines of a still darker shade. A number of these dense clusters give the plant a grand appearance, and they develop freely under easy treatment. The heavy head of the plant, as compared with its base, at once suggests a pot as the most convenient receptacle for its roots. Its side and bottom should be well perforated. The plant might also be grown in a basket, but unless this were exceptionally deep, and affording much surface for the clinging roots, the gain would be more than counterbalanced by the plant's liability to topple unless supported. A mixture consisting of fibrous peat, charcoal and crocks, with a good coating of sphagnum, suits this plant very well. A stove temperature and a moist condition about the roots and in the atmosphere are needed during growth; heat and moisture should be somewhat reduced when growth has been completed. The plant should be kept as near the light as possible at all seasons, but sunshine should be excluded during the growing period.

Cambridge, Mass. *M. Barker.*

Transplanting Hardy Ferns.—Spring is, no doubt, the best season for transplanting hardy Ferns, especially when the work is done in early spring. It too often happens that the transplanting is put off until the young and tender fronds have well started or are half-grown, and then it is next to impossible to handle them without injury. After this stage of growth has been reached the transplanting had better be deferred until the fronds mature, and then cut them back one-half or one-third before removal. Some species, like the Climbing Fern (*Lygodium palmatum*), do not transplant well in autumn, and seem to require spring planting. The growing points or buds of the Maiden-hair Fern (*Adiantum pedatum*) are extremely tender and brittle at any time in spring, and when they are packed for shipping great care is needed, or the plants will fail. Few plants pay more richly for the labor spent on them than the hardy Ferns, for, unlike most flowering plants which are attractive only in their flowering season, Ferns are a delight the whole season through. And then they can be put away in the shade, where other plants would not live. Many a dark, not to say an untidy, corner about American homes might be made attractive, and even beautiful, if planted with hardy Ferns and other shade-loving plants.

St. Louis. *H.*

Decay Spots upon Leaves.—Plants with large leaves are often much disfigured by blotches that appear at any place upon the foliage. The cause of these spots is sometimes not easy to determine. An otherwise perfectly healthy Calla-leaf may have a brown spot an inch long and a half-inch wide near its centre, and with no apparent reason for its existence. The probabilities are, however, that some days before a withered blossom of a plant above it fell upon the leaf, and, remaining there for a time, began to decay. Soon after, the force of the water from the hose drove the blossom off, but not until it had left the seeds of decay in the leaf. In other words, the fungus, usually a species of Botrytis, while flourishing upon the rich succulent substance of the blossom, sent its threads into the leaf below and began the decay that finally ruined the leaf. The Botrytis fungus is not usually accused of making

its attacks in a direct manner upon living tissue, but it does not hesitate to pass from the dead to the living when conditions favor it. In other words, the Calla-leaf is safe against the attack of the spores of the Botrytis, but when the vigorous filaments of well-established plants present themselves the resisting power is not sufficient to overcome them. If we had found the remains of the blossom in the centre of the dead blotch it would have been natural to ascribe the cause to the flower or the fungus it harbored, but in many instances the leaf blackens without any apparent cause. Nevertheless the cause remains the same, for the source of contamination had been removed before the decay in the leaf had become perceptible. The practical conclusion is, that no opportunity be given these half-way parasitic fungi to gain an entrance to healthy plants. The gardener knows how important it is to keep all dead leaves and decaying blossoms from contact with the healthy parts. Neatness as well as health demands that the living be kept apart from the dead.

Rutgers College. *B. D. H.*

Correspondence.

Notes from Passaic.

To the Editor of Garden and Forest:

Sir,—"American trees for American gardens," enthusiastically exclaimed a friend while making a tour through the ranges of the Blue Ridge, where is to be found such a variety of handsome trees and shrubs, only partly appreciated by our planters. Very much the same enthusiasm for American flowers moved me a few days since as I strolled through the hill-side garden of Messrs. H. Meyer & Co.'s Passaic Nursery and found many of our native plants well established and in bloom. *Shortia galacifolia*, in flower there, needs no introduction to the readers of Garden and Forest, but it cannot be too often told that this plant is one of the choicest of our native flora. Entirely hardy in this latitude, with beautifully colored firm, persistent foliage and dwarf habit, add to these charming fair-sized flowers, bell-shaped, with graceful curves, petals white, with the most dainty rosy flush borne on pink peduncles, you have a plant to excite enthusiasm. A mass of this gives distinction to the choicest border, and it will flourish, which is a merit not possessed by all Alpines. *Trillium grandiflorum*, *T. stylosum* and *T. pusillum* were well in bloom and happy in the not too dense shade. Erythroniums are now at their very best, with their beautiful maculated leaves and graceful flowers—among them the yellow "Dog's-tooth Violet" (*E. Americanum*), *E. grandiflorum* and *E. giganteum*. The white flowers of *Dicentra cucullaria* were just showing above the daintily cut leaves, while *D. eximia* showed racemes of red above its attractive foliage. If Hepaticas and Sanguinarias were rare flowers perhaps they would be appreciated by us as their beauty deserves, but looking through this hill-side garden and noting the dainty beauties in bloom, and Cypripediums, Sarracenians and others just pushing, and thinking of the succession of native flowers unmatched in their various seasons, the thought was forced on me that we do not appreciate our own treasures. Our hardy plantsmen, however, are finding a larger demand for native plants, and they are a feature in most nurseries. It is curious, though, that if seeds of any but the most common native plants are desired they must be ordered from abroad.

In the more open part of the nursery I noticed good breadths of Aubrietias in full bloom—*A. Græca*, *A. deltoidea* and *A. macrostyla*, the last distinctly the best of the purple varieties, and making a fine mat. *A. Leichtlini* may be a break toward the red, but its dull red flowers are of a color which can be spared from the garden.

Mertensia Virginica (Lungwort) was showing its gracefully drooping flowers; a most valuable plant in not too conspicuous a position. Hellebores are still in full bloom, *H. niger* in varieties and *H. orientalis*, both untouched by the severe winter. *Saxifraga cordifolia* is opening its rose-colored flowers, and is one of the best of the section, but its broad leaves sometimes suffer in hard winters. It will well repay protection. I think it has before been noted that Doronicums are the best early-flowering, large yellow composites. Here *D. Clusii*, *D. plantigeneum excelsum* and the variety Harpur Crewe were in bloom. The latter seems a good form of *D. plantigeneum excelsum* (and the name is much easier). *D. Clusii* is very similar in form, but its finely cut petals are slightly recurved. But space forbids my mentioning all the blooming plants, and I can only note *Arabis alpina variegata*, with flowers like the type, but with white variegated foliage. Great breadths of Narcissi, such as Pallidus Præcox, Golden Spur, Henry Irving and Sir Watkin, give the principal effect of color at this early season.

I noted *Heuchera sanguinea* in the open, strong and vigorous, and only the lower leaves scorched. Evidently this plant may be considered reliably hardy.

Elizabeth, N. J. *G.*

Botanical Nomenclature.

To the Editor of Garden and Forest:

Sir,—In No. 162 of Garden and Forest (vol. iv., pp. 165, 166), Mr. George B. Sudworth, of the Forestry Division, United States Department of Agriculture, discusses the use of binomials composed of specific names identical with generic, brought about by the rigid adherence to the rule of maintaining the oldest specific name, and records himself as in favor of the practice. He alludes to its non-acceptance in my "Catalogue of the Plants of New Jersey," but expresses the supposition that I had good reasons for not using it there. He is in error. I had no good reasons. I was deterred from accepting the well-known practice of zoölogists from simple conservatism.

When, in 1887, the committee of the Torrey Botanical Club which was appointed to issue the "Catalogue of Anthophyta and Pteridophyta growing within one hundred miles of New York," decided on taking the stand of maintaining original specific or varietal names, it was well aware of the revolution which such a measure would suggest, and had no idea as to the measure of support which such a suggestion would receive. Up to that time Professor Greene and myself were the only American botanists, I believe, who had recorded themselves in favor of the practice, and the committee deemed it wisest to await the result of its work before going further, deciding to throw out generic names identical with specific, and not to take up a considerable number of genera whose claim to priority was perfectly well known. In my New Jersey catalogue the nomenclature of the Hundred-mile Catalogue was closely followed, from my being governed by the same considerations of conservatism. However, now that the desired change of opinion, which we have ever since attempted to influence through the *Bulletin of the Torrey Botanical Club*, has been brought about, and, as Mr. Sudworth remarks, "nearly all botanists are thoroughly in unison with the present vigorous movement to place botanical nomenclature on a firm footing," I am heartily in favor of the practice he approves. But I would now favor going considerably further toward the methods of the ornithologists, so far, indeed, as to practically accept most of their "Code of Nomenclature." I would write *Magnolia fœtida* (L.), not *Magnolia fœtida*, Sargent; *Hicoria minima* (Marsh), not *Hicoria minima* (Marsh), Britton; *Catalpa Catalpa* (L.), not *Catalpa Catalpa* (L.), Sudworth. In other words, I would quote the original author of the name, and leave the author of the binomial to be brought out in the synonymy of the species, by means of a check-list or other compilation. This has the advantage of doing away with the double citation and eliminating all personal considerations in the publication of new binomials.

And there is another exceedingly good rule of the ornithologists which I may remark on here. It is to the effect that a generic name or binomial once used in description is unavailable for use for any other genus or species, even if it be shown to be a synonym. "Once a synonym, always a synonym," is a terse and very useful motto, which prevents many troublesome complications.

Columbia College, N. Y. *N. L. Britton.*

Insect Lime, Nevertheless.

To the Editor of Garden and Forest:

Sir,—Allow me to make a rejoinder to both Mr. Smith's and Mr. Jack's exceptions to the application of insect lime.

I appreciate Mr. Smith's warning not to turn a good remedy into a quack medicine, to be used "against all ills," but I must warn him in turn not to diagnose too hastily. There are two points he overlooks—first, that we do not expect our police to catch all the thieves, that a reduction only, and not extirpation, is attainable by all our remedies; and, secondly, that besides the biotic phases of insect life, accidental conditions must also be considered in devising means of protection. Now, while there may not be any voluntary wandering observed in the Tussock moth and Bag worm, as there is with the Gypsy moth, and, to some extent at least, with the Web worm, Mr. Smith, in my opinion, does not appreciate sufficiently the services of wind and rain in downing the larvæ. By these agencies they are thrown to the ground, probably

more than once during the season, and they return, of course, to their food-supply.

During the past few years the trees in the parks and streets of Washington have suffered severely from the ravages of the Fall-web worm, Tussock moth and Maple worm, and any one who has observed the countless numbers of caterpillars thrown down by rain-storms and winds, besides those which migrate voluntarily, re-ascending the trees, will not doubt that preventing this ascent would have a marked effect. Total defoliation would, no doubt, be prevented in many instances, and partial disfiguration at least retarded. The "lime-band" furnishes a cheap, simple, effective barrier. It is in preventing the ascent, Mr. Jack will notice, not the descent, that the "lime-band" becomes valuable, since the Fall-web worms, "both old and young, drop themselves to the ground without spinning when disturbed or sorely pressed for food."

Mr. Smith says that this remedy "does not begin to compare in effectiveness with winter collecting and destruction of egg-masses." This assertion could only be made after proper comparative experiment. Not only has the winter collecting of the pupa—as I know from personal unpleasant recollections—and the destruction of egg-masses by crushing been practiced against the European congener of the Tussock moth by the forest-administrations of Germany, and that on a large scale, but the latter method has been improved by using oils, tar, and, still better, "insect lime," to cover the egg-masses, which is a more radical measure, as it is not liable to miss or throw to the ground as many eggs as is done in crushing.

The only experiment with "lime-bands" against this pest, which was made in a Prussian forest-district (because the above methods have not yet proved satisfactory), under the direction of the well-known entomologist, Dr. Altum, has remained incomplete. It showed, however, that a considerably larger number of larvæ was captured by the bands than the previous counting of the eggs would have led to expect, and that the defoliation on the treated Beech-growth took place at least five weeks later than in the neighboring unprotected growth, an effect which may be considered highly satisfactory. This was during a widespread attack of *Orgyia pudibunda*, when the remedies must be applied over large areas to be effective.

My contention, however, was, in the main, for the application of this remedy, in case of the Gypsy moth, in the same manner in which it has been found effective in its native home.

I would also take occasion again to point out to our economic entomologists, that insect fighting is done on a very large scale by the forest-administrations of Europe, and that it would be worth their while to study the methods practiced there more closely, and profit from experience dearly bought by others.

Forestry Division, Department of Agriculture, Washington. *B. E. Fernow.*

The Sugar Maple in Flower.

To the Editor of Garden and Forest:

Sir,—In speaking of the Sugar Maple in your issue of April 15th you say that "a tree in full flower when standing in the sunshine seems to be enveloped with a luminous mist, and is an object of striking beauty." This peculiar appearance of the Sugar Maple does not occur in this region every year, but just now this tree is unusually conspicuous. This is perhaps due to the fact that the flowers pushed out very rapidly during three very warm days, while the leaves are as yet hardly to be seen. These flowers hang in clusters from every bud, sometimes as many as twenty in an umbel, and on slender pedicels three inches long. The stems as well as the flowers are almost straw-color, and owing to their great abundance the tree is completely enveloped with these swaying tassels. No other trees are in leaf except an occasional Willow or Aspen, so that the Maples stand out from the bare forests and the fields, which scarcely begin to show the grass, in very striking relief. Individual trees can be distinguished at a distance of two or three miles, and are certainly much more conspicuous than usual. I only remember to have witnessed such a display but once before in a dozen years.

I should like to hear some satisfactory explanation of this noteworthy difference in the aspect of the Sugar Maple at this season in different years. Is it simply that the flowers are more abundant, or do they come out more slowly some years, so as to be partially hidden by the foliage, or do they open much earlier in certain years and make so striking a display because there are no other trees in flower or leaf to attract attention?

Morristown, N. J. *R. S.*

Periodical Literature.

Lindenia. Iconography of Orchids, conducted by J. Linden, Lucien Linden, Em. Rodigas and R. A. Rolfe. American edition, Brussels, 1891.

We have received the first two numbers of the American edition of this sumptuous Belgian publication which has now been appearing during the last six years under the editorship of Mr. Lucius Linden, the son of the well-known botanical collector who is honored in the title. The literature of Orchids is singular in the considerable number of handsomely illustrated and therefore expensive works specially devoted to them, published by commercial firms engaged in the propagation and sale of these plants. At the present time *Reichenbachia* and Williams' *Orchid Album* in England, and *Lindenia* in Belgium, all with magnificently colored plates, strive to lay before the Orchid lovers of Europe and of America all that is new, rare and interesting in these plants. *Lindenia* is a worthy rival of its English competitors.

The American edition has been undertaken, the editor tells us in his introduction, "at the request of numerous amateurs of Orchids, who regret that they are not able to profit completely by a work written in the French language." The American edition is to be "carried on in exactly the same way as has the French edition during the last six years, in which 264 species or varieties have already been figured; appearing regularly every month, seeking the accomplishment of the same programme, with the co-operation of the same contributors, and the same artists who have hitherto received the favorable sympathies of the public."

The first figure (No. 265 of the French edition) is devoted to the beautiful new *Cattleya Rex*, a plant which is just now exciting in the highest degree the imagination of the lovers of Orchids, and as an example of the character of the information *Lindenia* is intended to convey, we shall quote at some length what it says of this plant:

"The Cattleya of which we give to-day the representation has been known to M. J. Linden for fifty years, but it was only at the end of last year that it was sent to Europe.

"Originally discovered by M. J. Linden during his travels in South America, it was met with again, thirty years later, by Wallis, who proclaimed it the most beautiful of Cattleyas, but he did not succeed in sending living plants to Europe. Twenty years after this second discovery, one of the collectors whom M. Linden had sent to search for it diligently, succeeded at last in obtaining it, and sent some plants in good condition to Brussels.

"The great difficulty of this search arose especially from the fact that the plant has not, as have Orchids in general, a central district, a place where it may be found in quantity. Also, one of the collectors of Messrs. Linden spent a whole year in the same locality (which it is not yet possible for us to divulge) without seeing or collecting more than thirty plants of this Cattleya during this long period.

"The country in which it grows is, moreover, one of the least accessible in South America, and the journey across the mountains, among rugged rocks, sometimes cut naturally in nearly vertical steps, without even an indicated path, without any base of operations, in the midst of difficulties without number, entail the loss of considerable time, and frequently the life of the plants collected with so much trouble. One can form an idea of the difficulties encountered when it is stated that not only the plants but also the collectors themselves have to be carried for several days on the backs of the Indians.

"These persistent efforts were amply compensated for when one of the plants imported produced in December last a raceme of its splendid flowers, of which we now publish a representation. Seldom has the appearance of a new Orchid made an equally striking impression on the beholder, and yet the flowers were produced on an unmatured growth, and had not attained their natural dimensions. We may affirm that those which will appear this year will be sensibly larger than those represented on our plate. As to color, we do not think it possible to surpass them in beauty. Throughout the whole Orchid family there exist but few gems comparable to the labellum of this species, in which the purple combined with gold is modified into a crimson of the hue of Spanish wine, and the marblings and the veins are of an exquisite elegance."

Cultivators of Orchids will certainly have good reason to complain that the information with regard to the practical details of cultivation, which they have a right to expect in a work of this character, is either omitted entirely or is so very meagre as to be of little practical value. The plates are generally well drawn and very beautifully printed, but the appear-

ance of the book, from the artistic point of view, is sadly marred by the bright red line which surrounds the page of text.

It may be a convenience to our readers to know that Monsieur Linden's address is 100 Rue Belliard, Brussels, and that *Lindenia* can also be procured from all the principal booksellers of the United States.

Notes.

In a report on Forage Grasses, just issued by the Mississippi Experiment Station, Japan Clover is said to yield on rich land from two to three tons of hay to the acre of as good quality as the best Clover hay.

According to the Census Bulletin on Truck Farming, the season at which a given vegetable reaches a marketable size advances northward along the Atlantic coast at the rate of about thirteen miles a day.

The second annual banquet given by the trustees of the Missouri Botanic Garden in honor of Henry Shaw, the founder of the Missouri Botanic Garden and the Shaw School of Botany in St. Louis, will be held in that city on Thursday, the 21st of May.

The census returns show that the average melon-fields of the southern Atlantic states yield 400 salable melons to the acre. Twelve hundred of these will load a car, which will sell in the north for from $150 to $275, which leaves a net return of from nothing up to $150 an acre.

The Third Report of the California State Board of Forestry, which has been noticed in these columns, can be secured from Mr. J. C. Lemmon, of Oakland, California, by remitting ten cents a copy to cover expenses. The previous report, which relates principally to the Pines of the Pacific slope, can be obtained in the same way of Mr. Lemmon.

The *Illustrirte Gartenzeitung*, of Vienna, under the title of "New Roses for 1891," publishes a list of eighty-seven varieties, produced by thirty horticulturists. Five varieties are of American origin: Golden Gate, Henry M. Stanley, Maud Little, Mrs. Jessie Fremont and Pearl River, all announced by Messrs. Dingee and Conard, of West Grove, Pennsylvania.

One of the most curious plants in Europe was a Birch-tree which for about eighty years grew vigorously on top of the unfinished tower of St. Stephen's Church, in Vienna. When, in recent years, the work of completing this tower was begun, the tree was transplanted into the Rath-haus Park, but, in spite of the most careful tending, it died about three years ago.

The office of Commissioner of Forests has been abolished in Colorado. Since this state has been hitherto supposed to take a more enlightened view of the value of her forests than some others, the determination to dispense with any officer whose duty it was to give special attention to this interest is a surprise, and, at this distance, seems like a step backward.

It is about forty years since the Weigelia was first introduced into European gardens from China. German catalogues now note between thirty and forty varieties, most of which have pink or pale crimson flowers, although, in one or two, the flowers are darker crimson, and in about half a dozen are pure white. A few varieties have also been grown with leaves streaked with yellow or white.

From the interesting address on the Sponge-bearing Cucumber, of which we have quoted the greater portion in another column, we learn that Herr E. Dammann, of San Giovanni-a-Teduccio, near Naples, has for years been hunting the world for seeds of the Luffa, which he has cultivated as a seedsman, and that he has secured varieties which are of great interest to botanical collectors. By exchanging with Herr Dammann, Dr. Harris has added materially to his own list of varieties for testing here, and has sent several of the most valuable sorts to Japan, Egypt, Cuba, Mexico and Florida, with a view to improving the varieties there.

A bill has been passed by the legislature of Ohio which creates a park board for the thriving city of Youngstown, and gives it the authority to establish the boundaries of a park, to accept lands for park purposes, and to make necessary regulations for its government and maintenance. The Commission was authorized to make a preliminary survey, with an estimate of the cost of the probable improvement, and submit the same to the vote of the people. The project was sustained by a majority of three to one. We understand that suitable grounds near the city have been secured, and the descendants of the men who inaugurated this movement will bless them for taking steps in this matter before the opportunity was lost of securing the land at a reasonable price.

From Mr. H. B. Ayres, of the Forestry Department, Washington, comes the following note of observations which he made in the forests of northern Minnesota last winter. In slightly timbered regions the "pot-holes" along the hills of drift have a border which is frequently covered by standing water, and upon which trees do not grow. Where the timber has been lately cut away it is a common thing to see a belt of thrifty timber on the moist land encircling the pond-hole, and again inside of this belt of living timber another belt of dead trees and grass above an old shore-line. The inference seems irresistible that denudation causes a more rapid accumulation of water, which means a higher rise of water in the basin, thus killing the trees which had grown up where water had not previously injured them.

A German horticultural journal says that one of the latest inventions in medicine is the use of cold greenhouses in tropical countries as a means of combating yellow fever. This disease, it states, can be conquered if one removes to those elevated regions in which Oaks will grow. This fact recently inspired a celebrated Cuban physician with the idea of reducing the temperature of sick-rooms by artificial means, and wonderful cures resulted. Now it is proposed that, in districts liable to the epidemic, each town shall erect a great glass-house in which plants of cold and temperate regions may be grown, the temperature being artificially cooled instead of heated, as in our greenhouses; and that they shall be devoted to the treatment of patients suffering from the fever.

The California Board of Forestry has memorialized the Congress of the United States on the subject of the water-supply which so profoundly affects the material welfare of that state. Environed as they are on the south and south-east by an arid district almost uninhabitable by reason of its torrid heat, the people of California look upon the enlargement of this inhospitable region with profound apprehension. Their immunity from invasion by this hostile climate depends upon the benign influence of great forests, and the diminution and extinction of these forests must be inimical and fatal to their prosperity. The forest-commissioners, therefore, urge the absolute withdrawal from sale of all the timber-lands in California until future surveys have determined what tracts should be held in permanent forest. And, again, they ask that the timber of such lands, when fit to harvest, should be sold, and not the lands. The lumberman, as a rule, cares little for anything beyond the number of feet of timber to an acre, and, therefore, there will be no loss of revenue in selling the logs only, while, if the fee remains in the United States, the Government can impose such reasonable regulations for preserving the young growth and preventing fire as will insure the perpetual forest-character of these lands and yield future returns of revenue.

A series of field meetings will be held in the Arnold Arboretum during May and June for the purpose of supplying popular instruction about the trees and shrubs which grow in New England. They will be held on Saturday mornings at ten o'clock, and on Wednesday afternoons at three o'clock, beginning on Saturday, May 9th, and will be conducted by Mr. J. G. Jack. The class will assemble in the lecture-room of the building of the Bussey Institution, where a brief review will be given of the plants to be especially observed during the meeting of the day. It will then adjourn to the plantations and the nurseries of the Arboretum for an informal study of the plants themselves. It is not proposed that the instruction given in these meetings shall be technical, and a knowledge of descriptive botany is not essential for persons who desire to follow them. The intention is to indicate, by comparison, the easiest means of distinguishing the common native trees and shrubs as they appear in this part of the country, and of recognizing the foreign species which have been introduced into our gardens. The ornamental and useful properties of trees and shrubs, their habits of growth, their peculiarities and common diseases, will be considered, the different plants being taken up, as far as possible, in course as they become conspicuous by flowering. An hour and a half to two hours will be devoted to each meeting. During the season it is expected that the class will be conducted to at least two well-known gardens in the vicinity of Boston. Applications or further inquiries may be addressed to Mr. J. G. Jack, Jamaica Plain, Massachusetts.

"THERE IS NO APPEAL BEYOND CÆSAR"

The Late World-Renowned Dermatologist,

Sir ERASMUS WILSON, F.R.S.,

THE FIRST AND ONLY

President of the Royal College of Surgeons

Who ever gave a public testimonial, and the following is

THE ONLY TESTIMONIAL HE EVER GAVE

"If it be well to wash the skin—and we never heard the proposition questioned—it is well also that we should be familiar with the means by which that purpose may be most efficiently attained.

"We once knew a beautiful woman, with a nice complexion, who had never washed her face with soap all her life through; her means of polishing were, a smear of grease or cold cream; then a wipe, and then a lick with rose water. Of course we did not care to look too closely after such an avowal, but we pitied her, **for soap is the food of the skin.**

Soap is to the Skin What Wine is to the Stomach,

a generous stimulant. It not only removes the dirt, but the layer which carries the dirt; and it promotes the displacement of the old cuticle to make way for the new, to increase the activity of change in the skin. Now turn we to Toilet Soaps and there we find

A Name Engraven on the Memory of the Oldest Inhabitant

PEARS.

PEARS' SOAP! an article of the nicest and most careful manufacture, and **the most refreshing and agreeable of balms to the skin."**

GRAPES My specialty for 34 years Vines of 100 best kinds. Concord, Ives, Moores Early, Lady, Pocklington, Delaware, Woodruff Red, Green Mountain, Colerain Brilliant, Moore's Diamond, Moyer, Champion, Eaton, etc. Industry, Triumph and other Gooseberries. Currants, Raspberries, Strawberries and Blackberries. Best stock. Low prices. Catalogue free. GEO. W. CAMPBELL, Delaware, Ohio.

BURNETT'S PERFECTLY PURE HIGHLY CONCENTRATED Standard Flavoring EXTRACTS

ABSOLUTELY PURE.

FULL MEASURE.

No cartoons to hide long-necked and panelled bottles.

Thoughtful people should read the testimonials below, from cooks of national reputation.

Joseph Burnett & Co., Boston:

Gentlemen,—I have used your Extracts for years, knowing them the best to be found in the market.

MARIA PARLOA,
School of Cookery, Tremont Street.

From Professor Blot.

A good dish is often spoiled or rendered unpalatable by the use of a detestably cheap, impure and deleterious Flavoring Extract.

In answer to inquiries from the ladies of my various classes, I invariably reply that during the past two years of my lectures on cookery, "I certainly prefer those prepared by Joseph Burnett & Co., of Boston, above all others."

BURNETT'S EXTRACTS are for sale by Grocers and Druggists generally throughout the United States; also in many foreign countries.

Do not accept the poor substitutes sometimes offered, but insist upon obtaining BURNETT'S, as they are THE BEST.

ALPINES AND SUB-ALPINES. Herbaceous, Bog and Aquatic, Ferns, Lilies, Orchids, Vines, Shrubs, &c. Our little book of Natives, with engraving of Nurseries, tells how we grow them. 2 stamps. GILLETT & HORSFORD, Southwick, Mass.

JAPAN MAPLES Thrifty young plants of the choicest kinds—our own propagation—which will transplant successfully; also other rare trees and shrubs in great variety. Exceptional opportunity to secure good plants of these beautiful trees. Address

ELLWANGER & BARRY,
Mount Hope Nurseries, Rochester, N. Y.

A GREAT INVENTION,

The merits of which must Command Universal Use.

"NEPONSET" WATERPROOF FLOWER POTS

Light, Handsome,
Clean, Durable,
Cheap, Unbreakable.

Sole Manufacturers:

F. W. BIRD & SON, East Walpole, Mass.

Wholesale Agents:

R. & J. FARQUHAR & CO., S. Market Street, Boston, Mass.
AUGUST RÖLKER & SON, Station E, New York City.

WRITE FOR SAMPLES, CIRCULARS, ETC.

FACIAL BLEMISHES.

The largest establishment in the world for the treatment of the skin and scalp, eczema, moles, warts, superfluous hair, birthmarks, moth, freckles, pimples, wrinkles, red nose, red veins, oily skin, acne, blackheads, barbers' itch, scars, pittings, powder marks, facial development, etc. Consultation Free, at office or by letter. 128-page Book on all Skin and Scalp Affections and their Treatment sent (sealed) for 10c.

JOHN H. WOODBURY,
Dermatologist, 125 W. 42d St., N.Y. City.

Woodbury's Facial Soap
For the Skin and Scalp.

Prepared by a Dermatologist with 20 years' experience. Highly indorsed by the medical profession; unequaled as a remedy for eczema, scaldhead, oily skin, pimples, flesh worms, ugly complexion, etc. Indispensable as a toilet article, and a sure preventive of all diseases of the skin and scalp.

At Druggists or by mail, Price 50c.

V. H. HALLOCK & SON wish to call the attention of the trade and general public to their exceedingly large stocks of

BULBOUS, TUBEROUS AND HARDY HERBACEOUS PLANTS,

and beg to solicit a trial order.

GLADIOLI, extra choice named sorts, in over 1,500 varieties.
" **SNOW WHITE (NEW).** The best White Gladoli for forcing. Our mixtures of the above strains are the finest in cultivation.
IRIS KŒMPFERII, Double and Single. Over 500 named varieties. The largest and finest stock in this country.
IRIS GERMANICA. A very large collection of all the finest sorts.
IRIS SIBERICA. One of the most showy of all Irises, color Royal Purple.
LILIES. Our Lily Farm is replete with over 500 varieties of all the most choice and latest importations from Japan and other countries.

We are also very large importers of **HYACINTHS, TULIPS, CROCUS, Etc.,** commonly known as Dutch Bulbs for Fall Planting and Spring display. In our Herbaceous Grounds we have a large and varied Collection of **HARDY PLANTS,** which for a whole season flowering cannot be surpassed. The best stock of **Herbaceous Phloxes** extant.

DAHLIAS. We grow over three acres, and our stock comprises nearly 1,000 varieties, the cream of this country and also of English growers. Catalogues and Special Prices on application to

V. H. HALLOCK & SON,
BULB GROWERS AND EXPORTERS,
QUEENS, N. Y.

GLASS For GREENHOUSES, GRAPERIES, CONSERVATORIES, HOTHOUSES AND HOTBEDS.

VANHORNE, GRIFFEN & CO.
Importers of French Glass. Also American Window Glass.

Special Importation for Rose-house purposes.

131, 133, 135 & 137 FRANKLIN ST., NEW YORK CITY.

Highest Order of Engraving
PHOTO-ELECTROTYPE ENGRAVING COMPANY
7·9·8·11 NEW CHAMBERS ST NEW YORK.
formerly 20 Cliff St.

N.Y. Engraving and Printing Co.
PHOTO-PROCESSES.
ENGRAVED PLATES FOR ALL ILLUSTRATIVE PURPOSES.
320-322 Pearl Street,
NEW YORK.

HITCHINGS & CO.

Established 1844.

Greenhouse Heating

AND

VENTILATING.

Base-Burning Water Heaters for Small Conservatories.

Corrugated Fire Box Boilers for large Greenhouses

Horticultural Architecture

AND BUILDING.

Greenhouses, Conservatories, Palm Houses, etc.

Erected complete, or the Structural Iron work shipped ready for erection, with plans, details, and full instructions to enable the local builder to erect same.

HITCHINGS & CO.,

No. 233 Mercer Street, New York.

Send Four Cents postage for Illustrated Catalogue.

TREES RARE, CHOICE AND HARDY; also the Best SHRUBS, VINES and FRUITS in quantity.

The finest Japan Maples, hardy Azaleas, Rhododendrons, Roses, Evergreens, and Trees for Avenue or Street Planting Choice Collection of Native Herbaceous Plants. Extra Foreign Vines for Graperies. Catalogues and full particulars on application.

FRED. W. KELSEY, 145 Broadway, New York.

Readers of GARDEN AND FOREST are requested to mention that paper in corresponding with advertisers.

NUT TREES.

CHESTNUTS.—Japan Mammoth and **Giant, Parry's;** Japan Walnuts, **Japan Golden Russet, Idaho** and Kieffer Pears, **Eleagnus Longipes, Hardy Oranges,** and other valuable novelties. Small Fruits, **Grapes,** etc. Fruit, Shade and Nut Trees, Ornamental Shrubs, Vines, etc. Illustrated Descriptive Catalogue Free.

WM. PARRY, Parry, New Jersey.

LARGE TREES. Well grown specimens of large size; Nursery Trees, recently transplanted. The best varieties of **Maples, Beech, Elms, Magnolias, Retinisporas, Picea, Pines, Thuyas,** etc. Also **100 Varieties** of Flowering Shrubs and Vines. Come and examine the stock, or correspond with me.

SAMUEL C. MOON, Morrisville, Bucks Co., Pa.

On N. Y. Division of P. R. R., thirty miles from Phila.

Parsons & Sons Co.

LIMITED.

Kissena Nurseries, Flushing, N. Y., offer

Rhododendrons

of American grown hardy sorts.

Hardy Azaleas.

For other rare and old plants, see Catalogue.

AMERICAN WOODS

A book on Woods, containing *actual and authentic specimens.* PREPARATIONS OF WOODS FOR MICROSCOPE AND STEREOPTICON, and WOODEN CARDS, for invitations, calling cards, etc. Send for circulars.

R. B. HOUGH, Lowville, N. Y.

Six days earlier than any variety tested at the Agricult'l Ex. Grounds at Geneva, N. Y. Color greenish white: pulp tender, sweet and delicious. The only grape that ranks first both in earliness and quality. Each vine sealed with our registered trade-mark label. Send for circulars giving further information. Agents wanted

Address STEPHEN HOYT'S SONS, New Canaan, Ct.

ORCHIDS.

Established and Fresh Imported Plants, mostly useful for Cut Flowers, at very low prices. Best quality of Orchid Peat. Write for our Price List.

FREDERICK MAU,

P. O. Box 322. SOUTH ORANGE, N. J.

THE GREAT AMERICAN TEA COMPANY

CHANCE FOR ALL

To Enjoy a Cup of Perfect Tea. A TRIAL ORDER of 3½ pounds of Fine Tea, either Oolong, Japan, Imperial, Gunpowder, Young Hyson, Mixed, English Breakfast, or Sun Sun Chop, sent by mail on receipt of $1.00. Be particular and state what kind of Tea you want. Greatest inducement ever offered to get orders for our celebrated Teas, Coffees and Baking Powder. For full particulars address THE GREAT AMERICAN TEA CO.

P. O. Box 289. 31 and 33 Vesey St., New York.

ERIE RAILWAY.

The Picturesque Route of America. Via Niagara Falls or Chautauqua Lake. An Enchanting Panorama of Mountains, Forests and Streams.

SOLID TRAINS between New York and Chicago. No change of cars. VESTIBULED LIMITED (strictly first-class), without extra charge for fast time and superior service.

W. C RINEARSON, General Passenger Agent.

SIEBRECHT & WADLEY

New Catalogue of Plants.

ROSE HILL NURSERY

NEW ROCHELLE, N.Y.

Tuberous Begonias

A SPECIALTY.

Efforts made by us to introduce

THE OAK

in ornamental gardening have been so successful that our Catalogue describes now Forty kinds that we have for sale. Our

Pin Oak, Scarlet Oak, Swamp White Oak & Red Oak

are especially fine this season. Our **Illustrated Catalogue** (price 6 cts.) will be worth examining by all lovers of trees, shrubs, fruits, or out-door plants of any kind.

THOMAS MEEHAN & SON, Germantown, Phila.

FAY CURRANT HEADQUARTERS. GRAPES

BEST & CHEAPEST

NEW GRAPES Brighton, Rockwood, Eaton, Moyer and all others New and Old. SMALL FRUITS. Catalogue Free. GEO. S. JOSSELYN, FREDONIA, N. Y.

Arnold, Constable & Co

LONDON AND PARIS STYLES

Suits, Dinner and Reception Dress,

WRAPS, JACKETS AND ULSTERS.

WATERPROOFS.

Ladies' and Children's Underwear.

WRAPPERS, SACQUES, SILK SKIRTS.

Broadway & 19th st.

NEW YORK.

Flower Pots.

We give special attention to private trade, and keep always on hand a large and selected stock of perfectly made Pots, as follows:

Hand-made, old pattern, from 4-inch to 24-inch inclusive.

Machine-made, from 2-inch to 4½-inch, old pattern, straight sides.

"Standards," from 1¾-inch to 12-inch inclusive.

Distance should not prevent private trade from using the best Pots that are manufactured, as freights are very low and breakage nominal. Correspondence solicited.

A. H. HEWS & CO.,

North Cambridge, Mass.

THE NEW WEBSTER

JUST PUBLISHED—ENTIRELY NEW.

WEBSTER'S INTERNATIONAL DICTIONARY

A GRAND INVESTMENT

for the Family, the School, or the Library. Revision has been in progress for over 10 Years. More than 100 editorial laborers employed. $300,000 expended before first copy was printed. Critical examination invited. **Get the Best.** Sold by all Booksellers. Illustrated pamphlet free.

G. & C. MERRIAM & CO., Publishers, Springfield, Mass., U. S. A.

Caution!—There have recently been issued several cheap reprints of the 1847 edition of Webster's Unabridged Dictionary, an edition long since entirely superannuated. These books are given various titles,—"Webster's Unabridged," "The Great Work," "Webster's Dictionary," "Webster's Big Dictionary," "Webster's Encyclopedic Dictionary," etc., etc.

Many announcements concerning them are very misleading, as the body of each, from A to Z, is 44 years old, and printed from cheap plates made by photographing the old pages.

CORRESPONDENCE SOLICITED.

Will REMOVE May 1st to more commodious quarters, at 20 COLLEGE PLACE, corner of Park Place.